TWO MONTHS OF FEVER DUTY

IN

GLASGOW ROYAL INFIRMARY.

On taking charge of two fever wards in the Royal Infirmary in the latter part of September, 1864, it occurred to me as desirable, for several reasons, to preserve a detailed record of all the cases under treatment, such as might serve to aid the progress of my own students of the present year, and contribute towards the settlement of certain questions recently under discussion in regard to the course, mortality, and treatment of typhus fever. With the aid of Dr. P. F. Robertson, my excellent assistant in the wards, these observations have now been carried out for a period of more than two months; and although my other occupations have made it impossible for me, having regard to the interests of the patients, to continue attendance in the fever wards during the winter, I believe that the sum of cases already recorded may be found to yield some results not unworthy of preservation.

The necessarily brief abstracts now to be given of the cases under observation have been carefully condensed from the notes in the journals of the Royal Infirmary;* and although it would have been easy, perhaps, by employing additional reporters, to obtain a larger body of minute details for analysis, I preferred to be in a position to state, as I now do, that for every single fact here referred to, either in detail or in abstract, Dr. Robertson and I are directly responsible. To him, indeed, I am indebted more than I can well express, for the care and steadiness with which

* The Roman numerals designating the cases in the journals correspond with the Arabic numerals in this paper.

the cases were watched and noted during my absence, and I have the same confidence in his observations as in my own. I wish I could have spared the reader the trouble of looking over these abstracts; but it did not appear possible to communicate the facts of this paper in a trustworthy form, without a brief notice of each case being furnished for reference. The more important cases, however, may be singled out by reference to the notes, and to the remarks which follow at the end.

I.—MALES.

In the male ward there were 68 cases numbered in series as admitted during the period above-mentioned, and of these 58 were either certainly or very probably cases of typhus fever, 3 (cases 26, 33, 59) of enteric fever, 4 (cases 23, 27, 34, 50) of febricula or fever of undecided type, 1 (case 16) of scarlet fever, and 2 (cases 45, 56) of pneumonia. One case not included in the numerical series was that of a child admitted with its father under suspicion of fever, but found to be in fact free from disease. These are literally all the admissions, during the period stated, to the male ward (No. 16), not excluding even those admitted only to die. And I proceed now to give a condensed summary of each of these cases, extending the extracts from the journals, or the added remarks, according as the cases, in the narratives before me as I write, present features more or less particularly demanding attention.

The following general statements, however, are applicable, more or less, to the whole of the cases, whether in the male or female department, and therefore need not be repeated. I have noted as "typhus" only cases presenting what is now so well known as the typhus rash, or, in default of this, cases so closely associated with others having the rash as to leave no doubt of the character of the fever. A somewhat similar remark applies to the cases noted as "enteric fever," and to the single case of scarlet fever. Under the head of "febricula" I have been compelled to include one or two cases which *may* have been typhus, but in which no conclusive evidence existed of the character of the disease, and in one of the instances noted as "pneumonia," in the male ward, a possible doubt may perhaps be admitted as to the pre-existence of typhus fever not evidenced by eruption. The diagnosis of these various diseases was in all cases established and noted as soon as possible after admission, and in no case can the diagnosis be said to have been contingent on the event of the disease, or left to be settled by post mortem examination or otherwise, after the patient's death or dismissal. The reader has therefore before him, as completely as is possible in a

printed record of moderate length, the entire materials on which he may form his own judgment.

The treatment, where not otherwise specified, has been conducted mainly on the following principles:—To afford a bland and nutritious aliment throughout the fever, chiefly consisting of milk and water, buttermilk, rice and milk, arrow-root, and beef tea, sometimes with a little bread, where it was relished. The choice of the special form of diet was to some extent determined by the feelings of the patient, and to a like extent left to the discretion of the nurses, but milk diet in all instances formed the staple nourishment. Farther, it has been considered expedient to employ no medicine *as matter of routine*, so that where no statement to the contrary is made, it may be presumed that no medicine at all, unless it may have been an ordinary laxative, or a little common cough mixture or the like, was administered throughout the disease. A similar remark applies to the administration of alcoholic stimulants, except that I have thought it right, in view of certain questions recently under discussion, to state distinctly, as from the hospital wine and spirit roll, which is kept with very great accuracy, the whole amount of stimulants given in each case; and where none were given, to make an express statement to that effect.*

Case 1.—*Typhus with Eruption—Recovery.*—Tinsmith, aged 15. Admitted September 24 (7th day of fever); dismissed October 11. A normal case of typhus fever. Admitted on 7th day. Some delirium up to 12th day, after which a gradual crisis, extending to 17th. Highest rate of pulse (except soon after admission), 120 on 12th day. Delirium up to 11th day. Copious rash. *No stimulants.*

Case 2.—*Typhus with Eruption—Recovery.*—Pipemaker, aged 32. Admitted September 26 (3rd day); dismissed October 21. Eruption fully developed on admission, and crisis rather early. In other respects a normal case. *No stimulants.*

Case 3.—*Typhus with Eruption—Recovery.*—Weaver, aged 32. Admitted September 26; dismissed October 10. Typhus following old bronchitis under circumstances of considerable exposure to cold. Disease not well defined at first, but after two days distinct rash, and course of disease afterwards strictly normal, though with remarkably little quickening of pulse, maximum rate being 86. *Stimulants*—Whisky, 15 oz. in all, given mostly after the crisis.

Case 4.—*Typhus with Eruption—Recovery.*—Hammerman, aged 16. Admitted September 27 (8th day); dismissed October 18. A copious rash, visible up to 17th day, or longer. Maximum rate of pulse 114, the rate falling from 10th or 11th day onwards. Slight chest complication. *Stimulants*—wine, 58 oz. in all.

Note.—I think it is almost certain that in this instance, as well as in a few others at the commencement of the observations,

* It appeared more trustworthy to make the statement as to the stimulants administered in this form than in the shape of an extract from the case-books, as I find that among the necessarily rapid records of so many cases there were many unavoidable omissions in the journals in this particular.

Dr. Robertson's previous convictions, together with the accident of a change of assistant in the ward immediately afterwards, during his temporary absence, insensibly overruled my own practice as regards stimulants. I find that the wine is ordered on the 11th day of the fever and onwards, without reference to any special symptoms requiring it, and my own recollections on the subject are a blank. I think it improbable that I could have intended to order this quantity of wine, or even any wine at all, to a lad of sixteen on the eve of the crisis, with no unfavourable symptoms.

Case 5.—*Typhus, with Eruption—Irritability of Stomach—Recovery.*—Potter, aged 22. Admitted September 27 (6th day); dismissed October 12. Much irritability of stomach up to 9th day, when it was completely relieved by 10 grains of ipecacuanha given as an emetic—Pulv. cret. co. cum opio, 10 grains, with soda water, and 2 oz. of whisky, having previously been given without effect. *Stimulants*—2 oz. of whisky as above.

Case 6.—*Typhus with Eruption—Recovery.*—Rivetter, aged 18. Admitted September 27 (8th day); dismissed October 12. Favourable but gradual crisis, beginning about 11th day. I present this case at large, though quite a normal case according to my experience, as a type of many others, and as a good illustration of typhus not influenced by remedies or stimulants.

Sept. 28. Patient quite intelligent, and memory good. Had a good sleep immediately after admission, but afterwards disturbed. No raving. Typhus rash quite distinct, and duration of disease given definitely as from this day week, when, on walking down to his work between 5 and 6 a.m., he first felt pains in the limbs, having been in his usual health the day before, and having slept well at night. Chief complaint now is of headache and pain in the eyes. Pulse 100. Takes milk and a little bread, with soda water and other effervescing drinks.

Sept. 29 (9th day).—Pulse 120. Did not sleep sound, possibly owing to castor oil, which operated during the night. Thirsty, and complains of heartburn, but otherwise as at last report.

Sept. 30 (10th day).—Pulse 120. Appears quite collected, but is stated to have had delirium, and says of his own accord that he dreamed a great deal in the night, among other things that he was fighting with some one. Still thirsty.

Oct 2 (12th day).—Pulse 104. Is rather improved; sleeps a little; no delirium.

Oct. 4 (14th day).—Pulse 76; distinctly double-beating, very soft, and undulating. Tongue still dry, but appearance of cleaning at edges. Slept well. Eruption still present, but faintly.

Oct. 5 (15th day).—Pulse 80, very soft. Tongue still dry in centre, but cleaning and moistening at the edges. Rash almost gone.

Oct. 8 (18th day).—Pulse 64. Tongue nearly clean. Convalescent. *No stimulants.*

Case 7.—*Typhus with Eruption—Recovery.*—Moulder, aged 23. Admitted September 28 (7th day); dismissed October 14. A rather mild case, with faint but still decided rash. Pulse 96 to 100 on 8th day of disease, very soft and intermitting. On this account 3 oz. whisky given, increased on 10th day to 6 oz. Pulse rising to 104, and losing intermittent character. Crisis on 13th day by protracted sleep, and on 14th day, pulse 84, but tongue still dry and brown, gradually cleaning up to 17th day. *Stimulants*—whisky, 42 oz. in all, given from 8th day onwards on account of state of pulse, but very probably without necessity. See note to case 4, above.

Case 8.—*Typhus with Eruption—Recovery.*—Miner, aged 28. Admitted September 29 (5th day); dismissed October 14. Early crisis; the pulse rising to 120 as its maximum about the end of the first week, and beginning to decline about the commencement of second week, remaining at 80 from 9th to 12th day, and then declining to 72. Tongue cleaning from 10th or 11th day onwards. *Medicines*—calomel, 5 grains, on day after admission; sol. morphiæ m. xv. on 11th day. *Stimulants*—whisky, in all 30 oz., commencing 6th or 7th day of fever. I believe the same remark applies here as in Cases 4 and 7; in which there was, in my opinion, no occasion for stimulants.

Case 9.—*Typhus with Eruption—Dangerous Bronchitis—Recovery.*—Labourer, aged 34. Admitted September 30; dismissed October 18. A normal but rather severe case up to the acmé (date undetermined), when a sudden accession of bronchitis placed the life of the patient in extreme danger; pulse being about 128, feeble at wrist. Extremities cold. Mucous râles heard in great abundance by the ear at a distance from the chest. Considerable oppression of breathing. In consequence of this complication, the quantity of stimulant (6 oz. whisky given two days before) was raised indefinitely, and after two days there was a marked improvement, with pulse 76 to 80, and all appearances of complete crisis. The bronchial accumulation in this case was so sudden, and so rapidly relieved at the crisis, that I was strongly impressed with the idea of its being due in part to some nervous influence connected with the fever acting through the spinal cord. It was preceded and accompanied by tremor and *subsultus tendinum*, as well as by great and sudden diminution of the animal heat. *Stimulants*—whisky, in all, 86 oz.; wine, during convalescence, 24 oz.

Case 10.—*Typhus with Eruption—Epistaxis—Recovery.*—Constable, aged 24. Admitted October 1 (6th day); dismissed October 21. Pulse attained its maximum rate, 116, on 9th day, when epistaxis occurred to a considerable extent without any other serious symptom. Upon 10th day pulse 104, soft. Tongue dry and brown. No renewal of bleeding. On 11th day epistaxis returned to such an extent as to require plugging of left nostril. On 13th day pulse 100. Tongue cleaning. On 14th day pulse 90; plug removed. On 15th day pulse 76. Tongue nearly clean. A slight shivering fit during the night, but convalescence uninterrupted. *Medicines*—opiate on 6th day. *No stimulants.*

Note.—In this case it required perhaps a strong faith in nature to abstain from interference either by stimulants or otherwise. But I was satisfied, by observing the regular decline in the frequency of the pulse from the 9th day onwards, that the disease was practically at an end, and the epistaxis only an unusual accompaniment of the crisis. It is remarkable that the convalescence was in almost all respects even unusually rapid and favourable.

Case 11.—*Typhus with Eruption—Recovery.*—Factory worker, aged 16. Admitted October 2 (7th day); dismissed October 21. Copious eruption and a clear history of contagion. A typical case of early crisis. The pulse rose regularly to a maximum rate of 112 on the 9th day, after which it fell gradually through six succeeding days to 76. On the night of the 8th day there was a good deal of delirium, which had diminished on the 10th, and disappeared on the 11th day. The tongue remained moist up to the 9th day, dried on the 10th, moistened again on the 11th, and thereafter cleaned rapidly. *No stimulants.*

Case 12.—*Typhus with Eruption—Injuries—Recovery.*—Boy, aged 14. Admitted October 4; dismissed October 25. Had sustained some injuries before admission, perhaps by falling out of bed; and throughout the disease

there was great sensitiveness of abdomen and of general surface, with crying and moaning, but with costive bowels, requiring a purge of calomel and jalap. Afterwards had compound chalk and opium powder on account of irritability of stomach. Poultice was likewise applied to abdomen. In other respects case not remarkable. *No stimulants.*

Case 13.—*Typhus with Eruption—Recovery.*—Moulder, aged 15. Admitted October 9; dismissed October 31. Crisis commencing about the 11th day. Normal case. *No stimulants.*

Case 14.—*Typhus with Eruption, resembling Febricula—Recovery.*—Labourer, aged 26. Admitted October 9; dismissed October 19. Almost a febricula in character, but the typhus rash quite apparent. Date of disease, however, not accurately ascertained. *No stimulants.*

Case 15.—*Typhus—Death.*—Miner, aged 35. Admitted October 8; moribund. Was ordered 8 oz. of whisky, but died in three or four hours. This was almost certainly a case of typhus, but was not seen by me, and I cannot speak as to the diagnosis with absolute certainty, though having no reason to doubt it.

Case 16.—*Scarlet Fever—Recovery.*—Boy, aged 7. Admitted October 10; dismissed October 24. A normal case. *No stimulants.*

Case 17.—*Typhus with Eruption—Death.*—Labourer, aged 21. Admitted October 10; died October 19, on 14th day of fever. A case of pure typhus, fatal by coma and collapse. Admitted on 5th day of disease. Pulse 96. Bowels costive. On 7th day, had slept pretty well. No delirium. Tongue dry. Pulse 108. Bowels open by medicine. On 9th day, tongue furred. On 11th day had slept well. Tongue furred and moist. Pulse 124. On 12th day was ordered 4 oz. of wine. On 13th day, pulse 136. Rash abundant. Tongue very dry and brown. "Patient lies with mouth open, and is restless; rather agitated, and does not sleep; evidently very delirious, but not violent; pupils rather insensible, but neither contracted nor dilated. Evacuations, however, are not passed in bed: 6 oz. whisky instead of the wine." On 14th day "has had no sleep, but been very restless; has had some difficulty in swallowing. Pulse rapid and soft. Breathing short and rapid. Died at 4 30 p.m." *Stimulants*—wine, 8 oz.; whisky, 12 oz., within two days.

Note.—In this case there was not the slightest apparent cause for alarm up to the 12th day of fever, and it was only on the 13th (the day before death) that the symptoms became really formidable.

Case 18.—*Typhus with Eruption—Recovery.*—Labourer, aged 14. Admitted October 11 (5th day); dismissed October 31. A very mild case, scarcely more than febricula, but with very distinct rash. Pulse, with exception of day of admission, never above 96. Tongue only a little dry about the 12th day. No nervous symptom except headache. *No stimulants.*

Case 19.—*Typhus with Eruption—Recovery.*—Mason, aged 18. Admitted October 11 (6th day); dismissed October 25. A mild case, but with well marked delirium on 9th and 10th day. Maximum rate of pulse 106, on 9th day; on 10th day, pulse 96; on 12th, 84. Tongue cleaning from 10th day onwards. *No stimulants.*

Case 20.—*Typhus with Eruption—Recovery.*—Labourer, aged 18. Admitted October 12 (9th day); dismissed October 31. A normal case, without severe symptoms, but with pulse rising in frequency till the 14th day (120). Tongue dry, and rash present to 16th. *Stimulants*—wine 2 oz.

Note.—The comparatively protracted crisis was the reason for

giving a small quantity of stimulant, which, however, was discontinued so soon as the fall of pulse was observed.

Case 21.—*Typhus with Eruption—Recovery.*—Iron-turner, aged 30. Admitted October 14 (10th day); dismissed October 26. A normal case, without severe symptoms. Maximum rate of pulse on 10th day, 114; rate very gradually declining up to 17th day, and crisis protracted over the whole interval; 17th day, pulse 63. *No stimulants.*

Case 22.—*Typhus with Eruption—Recovery.*—Carter, aged 26. Admitted October 14 (8th day); dismissed October 31. Maximum rate of pulse on 13th or 14th day. Gradual crisis. No delirium. *No stimulants.*

Case 23.—*Febricula—Recovery.*—Labourer, aged 13. Admitted October 14 (4th day); dismissed 25th October. *No stimulants.*

Case 24.—*Typhus with Eruption—Recovery.*—Comb-maker, aged 19. Admitted October 19 (6th day); dismissed October 31. A houseless wanderer, brought in by the police. The fever marked by considerable agitation, and appearance of shivering during the second week for a brief period, and on this account a small amount of wine given. Otherwise nothing unusual. *Stimulants*—wine 4 oz., on one occasion, as above-mentioned.

Case 25.—*Typhus with Eruption—Recovery.*—Grocer, aged 18. Admitted October 18 (day uncertain); dismissed November 4. Maximum rate of pulse 112, about end of second week. Crisis gradual. In other respects nothing remarkable. *No stimulants.*

Case 26.—*Enteric Fever—Convalescence.—Pneumothorax, with Pleurisy and Bronchial Abscesses of Lung—Death.*—Carter, aged 22. Admitted October 17 (8th day?); died November 19. This case presents many remarkable features, which cannot be dwelt upon at length in the present summary, but are fully recorded in the Case-book. On admission, patient was stated to have been 8 days ill, but could give no adequate account of himself, the nervous system being already fully under the influence of the fever. Spots were detected on the day of admission, and by observation and marking of successive crops during the next five days a clear and decisive diagnosis was established. The bowels, at first only slightly irritable, became decidedly loose, and continued so to a late period, without, however, any well-marked tenderness on pressure, or any trace of abdominal swelling. The state of the nervous system was throughout most remarkable, and different from that of any case of typhus up to this period under observation. The pupils, at first rather small than large, became much dilated; and from admission onwards to at least the 19th day of the fever, the patient, though evidently conscious, and perfectly free from delirium, could hardly be got to utter even a single word articulately. He was, however, perfectly capable of responding by signs, and for the most part made his wants known to the nurse. The expression of the face was also peculiar throughout. The following note was made on 27th October, probably about 17th day of disease:—"Face persistently flushed. The flush of a livid red, not very deep, but without any general duskiness of surface, and conjunctivæ only slightly injected. Pupils still somewhat dilated, but patient responds by signs that he sees quite well. Tongue very dry and brown, without much sordes." The rose spots continued coming out, though not very abundant, certainly to the 23rd, possibly to the 28th day; and the tongue continued very dry up to the latter date, although the pulse, amid many fluctuations (110 to 122), diminished in rate from the 23rd day, and on the 28th was 104, the skin continuing throughout almost perfectly dry, and without sudamina. This state of very gradual but decided improvement continued up to the 11th November, probably the 32nd day of disease, when patient suddenly complained of great pain and difficulty in breathing, referred to left side. For two days previously to this patient had complained of slight cough, but without giving any alarm. These

symptoms continued, notwithstanding the application of poultices and the administration of opium; and the physical signs, which, however, on account of patient's weakness and state of suffering, could hardly be very carefully examined, seemed to point in the direction of pneumothorax or pleurisy, the former being regarded as the more probable diagnosis. On the 15th November (36th day?) the pulse had risen to 160: signs of pneumothorax more distinct. Four days afterwards patient died. *Stimulants*—wine, 12 oz. in all, given for three days before death.

On post mortem examination there was found very extensive recent pleurisy of left side, evidently connected with pneumothorax, and limited by old adhesions at the summit and base of left lung. No perforation was discovered, probably owing to the extremely thick coating of recent lymph; but in both lungs were found, at various points, small yellowish sub-pleural collections of pus, scarcely ever exceeding in size a lentil or barley grain, and in relation with the somewhat dilated ends of the finer bronchi, the mucous membrane of which was, in the neighbourhood of these small abscesses, deeply purple in colour, and in one or two instances distinctly softened and ulcerated. There were no tubercles in either lung. The spleen was rather flaccid, but not at all pulpy or enlarged. The intestines presented slight prominence, with slaty tint of Peyer's patches throughout; and, near the ileo-colic valve, deep congestion of them, with two small but quite distinct ulcers in process of cicatrization.

NOTE.—This case is extremely interesting, not only as illustrating the ordinary progress of enteric fever, and its lingering and uncertain crisis, but as an example of a rather rare complication, viz., pneumothorax depending evidently upon the formation of small bronchial abscesses, associated with a tendency to ulceration, perhaps even of gangrene, of the pulmonary textures. This termination of enteric fever in pneumothorax, of which I have seen at least four, perhaps five instances, is not alluded to in the work of Dr. Murchison, who, however (pp. 559-60), notices the tendency to lobular and vesicular pneumonia with small abscesses passing at times into gangrene. In two cases besides the present I have observed pneumothorax associated with this form of pulmonary lesion; and I am inclined to think that further observation will show it to be not so rare as the absence of reference to it in the generally exhaustive work of Dr. Murchison would seem to imply. The condition of the nervous system in this case was very remarkable to me, as being so strikingly different from that observed in the great majority of cases of typhus, and so closely resembling that described in the case of Winifred M—— ("Clinical Medicine," p. 144), to the remarks upon which, in the preceding and succeeding pages, I beg to refer the reader, as illustrating a noteworthy feature in the symptomatology of this very interesting disease.

CASE 27.—*Fever without Eruption—Crisis on 8th day—Recovery.*—Boy, aged 10. There is nothing to render it probable that this was a case of typhus fever, except its coming from a street in which typhus was prevalent at the time. *No stimulants.*

CASE 28.—*Typhus with Eruption—Recovery.*—Engineer, aged 22. Admitted October 19 (8th day); dismissed November 4. Pulse rose to a maximum of

120 on the 11th day of disease, and then gradually declined till the 16th, at which time convalescence was nearly complete. Delirium was present almost from the time of admission, and became very considerable on the night of the 10th day, when it was treated by tartar emetic and opium. On the 12th day delirium had ceased; tongue remaining dry, however, for a day longer, and rash being visible up to at least the 17th day of the fever. The crisis was here indicated on the 12th day by the subsidence of the pulse, and the cessation of the delirium. The case is a typical example of the early crisis frequently observed at present, the pulse usually giving the first note of change. Successive daily notes of pulse from 8th day onwards were as follows, viz.:—108, 106, 116, 120 (11th day); 110, 108, 102, 94 (15th day). *No stimulants.*

Case 29.—*Typhus with Eruption — Recovery.*—Labourer, aged 15, admitted October 20 (5th day); dismissed November 10. This was another case of early crisis; the pulse attained its maximum rate (102) on the 9th day, and the tongue beginning to clean on the 10th. There was no reasonable doubt as to the accuracy of these dates. The typhus rash, though not copious, was quite distinct, and continued visible from admission up to the 10th day, on which the pulse subsided from 102 to 84. On the 11th day there was a slight erythematous blush on the face, with a renewed elevation of the pulse to 96, the erythema disappearing on the 9th day, and convalescence being uninterrupted. *No stimulants.*

Case 30.—*Typhus with Eruption—Recovery.*—This was rather a remarkable case in respect of the protracted delirium, beginning two or three days after admission, and extending to the 2nd November, which must have been about the 17th day of the disease. Notwithstanding this apparently unfavourable symptom, I regarded the regular subsidence of the pulse from the 5th day after admission onwards, as being a sufficient justification for abstinence from stimulants. The crisis was, however, exceedingly slow, and it was not till twelve days after the maximum pulse rate (120) was noted on the 26th October, that it had subsided to 60 on the 7th November. The successive pulse rates given below will show the remarkable regularity of the increment and decrement during this lengthened period. In consideration of these circumstances I give the case at length:—

Oct. 22.—Labourer, aged 35, date of illness not well ascertained, probably about 4th or 5th day. Pulse 98. Tongue moist. A very faint rash seen.

Oct. 24.—Pulse 102. Rash more distinct. Sleeps well, and takes his food. Tongue moist, and covered with a whitish fur.

Oct. 25.—Pulse 112. Tongue moist. Slept well, but raved a good deal. Complains that he does not get enough of food.

Oct. 26.—Pulse 120. Tongue dry. Raved a little.

Oct. 27.—Pulse 112. Of good volume, but soft. A good deal of raving last night. Tongue dry. Rash abundant, and quite distinct.

Oct. 28.—Pulse 112. Tongue furred and dry. Slept a little, and was quiet.

Oct. 31.—Pulse 94. Tongue very dry. Slept very little, and been raving very much.

Nov. 1.—Pulse 108. Tongue moistening at edges. Rash continues out. Slept some, but raved a good deal.

Nov. 2.—Pulse 96, and expression on the whole improved. Tongue also moister, and rash fading. Slept well, and no delirium. Skin throughout has been perfectly dry and warm, during the fever pungently hot, but is even now without the slightest trace of perceptible moisture. Patient complains that he gets nothing to eat, although he has had coffee and bread to breakfast, and milk and beef tea afterwards.

Nov. 4.—Pulse 64. Sleeping a great deal.

Nov. 7.—Pulse 60. Seems dissatisfied and distrustful, but no bad symptom. Seems anxious for more food, though he has the usual diet of convalescents.

Nov. 19.—Dismissed well. *No stimulants.*

Note.—The abstinence from stimulants in this case was founded upon a careful consideration of many previous observations, which led to the conclusion that after a fall in the rate of the pulse gradually maintained, the crisis in typhus may usually be considered as practically secure, however long delayed. In this instance the pulse did not at any time appear to me to indicate danger, and as the patient took the usual aliment throughout with much more than usual relish, I was not very apprehensive for his safety. Had I believed, however, with Dr. Todd, that "alcohol, carefully administered from an early period in small and often-repeated doses, is the best preventive of, and antidote to, delirium in acute disease," the practice in this case must necessarily have been very different. On this subject *vide* "Clinical Medicine," p. 203 to 205. Compare also Case 17 (Females); where the administration of stimulants was actually begun, but checked in consideration of the same rule as in this case.

Case 31.—*Typhus with Eruption—Recovery.*—Seaman, aged 23, admitted October 22 (12th day); dismissed November 7. A rather severe case, with a good deal of delirium, contracted pupils, and retention of urine. The pulse, however, well maintained as regards strength, and attaining its maximum (128) from 13th to 14th day. On 15th day decided improvement; but delirium continued more or less up to 18th, when the pulse had fallen to 90. In three days more the pulse had fallen to 60. This case closely resembles the last in many respects. *No stimulants.*

Case 32.—*Enteric Fever—Recovery.*—A perfectly normal case of enteric fever. A Swedish sailor, aged 24, who had, however, been on board a British merchant ship at time of seizure. The rose spots were quite distinct, and came out at least up to the 20th day. There was scarcely any delirium throughout the disease. *No stimulants.* Admitted October 24; dismissed December 7.

Case 33.—*Typhus with Eruption — Recovery.*— Cotton-spinner, aged 26, admitted October 25 (6th or 7th day); dismissed November 18. In this case, as in Cases 30 and 31, there was a considerable amount of delirium late in the disease; the fall of the pulse (maximum rate 116) beginning on the 12th day; and the delirium, which had been absent, or very slight, up to the 13th day, advancing as the pulse declined in frequency, and continuing till the 17th day, when the pulse was 76, and the tongue cleaning. Eruption more than usually copious and deep in colour, tending also much to ecchymosis. The bowels were also rather loose at the end of the first week. Notwithstanding these complications, *no stimulants* were administered, and patient made a perfectly good recovery.

Case 34.—*Typhus with Eruption—Recovery.*—Boy, aged 6, admitted October 25; dismissed November 15. *No stimulants.*

Case 35.—*Typhus with Eruption — Recovery.*—Scavenger, aged 27, admitted October 26; dismissed November 5. A case characterized by rather severe nervous symptoms throughout, and by a state approaching to fatuity, maintained long after convalescence. *Stimulants*—4 oz. of whisky were given for three days, and during the convalescence a pint of beer. Recovery was perfect.

Case 36.—*Typhus with Eruption—Recovery.*—Moulder, aged 22, admitted October 27 (9th day); dismissed November 11. Pulse declined gradually

in frequency from the 11th day (maximum rate 120). Delirium continued up to 14th, and dry tongue with traces of rash up to 16th day. *No stimulants.*

Case 37.—*Typhus with Eruption—Recovery.*—Engraver, aged 30, admitted October 26 (day uncertain); dismissed November 19. A rather protracted case, with a good deal of debility. *Stimulants*—56 oz. of wine in all, besides beer during convalescence.

Case 38.—*Typhus with Eruption—Recovery.*—Labourer, aged 17, admitted October 28 (8th day); dismissed November 26. A great deal of delirium from 11th to 13th day, but pulse declined in frequency, steadily, from 9th onwards, as in Case 29; and the typhoid symptoms, as in Case 33, were manifested chiefly during the decline of the pulse, which was regarded, however, as giving assurance of the safety of the patient during a protracted convalescence. Convalescence was retarded by pains in limbs, but was completed, so far as fever was concerned, from the 18th to the 20th day. *No stimulants.*

Case 39.—*Typhus with Eruption — Recovery.* — Painter, aged 46, admitted October 29 (12th day); dismissed November 12. Rate of pulse never higher than 92, and symptoms mild. Crisis on the 15th day. *No stimulants.*

Case 40.—*Typhus with Eruption — Recovery.* — Labourer, aged 14, admitted October 30; dismissed November 26. Pulse attained maximum rate (104) at beginning or middle of second week, and three days afterwards there was considerable sweating; the other phenomena of the crisis being gradual, and the symptoms not severe. *No stimulants.*

Case 41.—*Typhus with Eruption—Death from secondary inflammation of femoral vein occurring after convalescence.*—I give this case in full from the journal. Admitted October 31; died November 26.

Nov. 1.—Patient presented himself at the dispensary, complaining of having caught cold. Duration of disease not known. Very distinct typhus rash. Tongue white and moist. Skin hot. Slept some, but raved a great deal.

Nov. 2.—No sleep, and much raving, but is now quiet. Tongue tremulous on protrusion, and manner undecided, but otherwise no trace of agitation. Rash deep-coloured, and partly ecchymosed. Pulse 100 to 112, but so small that it is counted with difficulty. Answers are slow and hesitating, but not unintelligible or incoherent. Expression on the whole good. Whisky, 3 oz.

Nov. 4.—Pulse 110, soft and intermittent. Tongue dry. Rash ecchymosed. Slept a little better, and did not rave so much.

Nov. 5.—Pulse 90, of good strength. Slept pretty well, and a little less raving.

Nov. 6.—Pulse 88. Raved a little. Tongue not so dry.

Nov. 7.—Pulse 84, but soft, with a tendency to irregularity. Tongue is dry and brown, but no delirium; and general appearance is that of convalescence. Slept a good deal. Eruption still visible.

Nov. 9.—Convalescent. Whisky was continued daily from 2nd November until 24 oz. were given in all. It was exchanged for a pint of beer on 13th, patient being completely convalescent, and gaining strength daily. No further note till the 18th.

Nov. 18.—Complains of pain in left leg. On examination it is considerably swollen, and painful on pressure, especially along the course of the femoral vein. Hot fomentations to part, and a flannel bandage to be applied to the whole limb.

Nov. 25.—Swelling and pain in limb are unabated. He complains of pain in the left side of abdomen, and has vomited occasionally during the day. Raved a good deal last night, and is now unintelligent. Pulse 124. Poultices to limb. Brandy 4 oz.

Nov. 26.—Raving continued. Patient became rapidly worse, and died at 9.30 a.m. On post mortem examination femoral and external iliac veins were found full of lymph, and with marked traces of inflammatory thickening extending up to the common iliac. Examination, however, being at an irregular

hour, was not performed with due attention to details as regards the internal organs. *Stimulants*—during the progress of this case the patient had 24 oz. of whisky, and a pint of beer daily during the convalescent stage.

NOTE.—Notwithstanding the occasional occurrence of an affection resembling phlegmasia dolens both in typhus and enteric fever, this is the first fatal case of the kind which has occurred within my experience. Dr. Murchison also observes that, as a rule, the patient recovers. He records, however, one fatal case, in which the death took place apparently from acute atrophy of liver, and fatty heart, and in which no clot was found in femoral vein. From this case, and from the previous observations of Drs. Graves, Stokes, and Mackenzie, Dr. Murchison draws the conclusion that phlebitis is not an essential part of the painful swellings which occur in the lower limbs after acute disease, and especially after typhus. The present case at least demonstrates the converse but not inconsistent proposition that phlebitis may be present in such cases, and from what I have myself observed I am inclined to think that it is so in the majority. In this instance the convalescence from typhus was evidently all but complete when the secondary disorder occurred.

CASE 42.—*Typhus with Eruption—Recovery.*—Boxmaker, aged 21. Admitted October 31 (8th day); dismissed November 24. This case was characterized chiefly by sleeplessness without delirium up to the 12th day, at which the pulse attained its maximum rate of 102, declining thence gradually to 64. There were no remarkable phenomena. *No stimulants.*

CASE 43.—*Typhus with Eruption—Recovery.*—Labourer, aged 14. Admitted November 1 (7th day); dismissed November 23. Maximum pulse, rate 124 to 128 on 8th day. Delirium and dry tongue, persisting to 13th. *No stimulants.*

CASE 44.—*Typhus with Eruption—Recovery.*—Clerk, aged 16. Admitted November 4 (7th day); dismissed December 1. Eruption in this case unusually deep in colour, and ecchymosed. There was also excessive delirium for several days at beginning of second week. On 10th or 11th day the pulse reached its maximum rate of 116, and soon thereafter the delirium abated, the pulse falling successively to 102, 84, and 78. The rash continuing present to 14th day. *No stimulants.* The youth of patient adding an additional reason for abstinence to those already advanced in connection with Case 30.

CASE 45.—*Pneumonia of moderate intensity—Recovery.*—Moulder, aged 24. Admitted November 7; dismissed November 18. Treatment by 1-16th gr. doses of tartar emetic. *No stimulants.*

CASE 46.—*Typhus with eruption, and in addition a scarlatinoid rash appearing about 12th day of disease, and persisting to 18th. No other symptoms of scarlet fever—Recovery.*—Factory-worker, aged 23. Admitted November 8 (9th day); dismissed November 28. The only remarkable feature in this case was the scarlatinoid rash above-mentioned, superimposed upon a very well marked petechial typhus rash. Scarlatinoid rash advanced during the crisis and convalescence, while the petechial rash present on admission was fading. There was no sore throat, or other symptom of true scarlatina, and the progress of the fever towards convalescence did not appear to be affected by the secondary eruption. *No stimulants.*

NOTE.—Drs. Jenner and Murchison mention a scarlet rash as occasionally preceding the normal eruption in enteric fever, and I have once or twice seen a scarlet rash associated with or closely preceding the eruption in typhus, but never before, as in this case, succeeding it, where no other symptom of scarlet fever existed. The eruption was a uniform scarlet blush over nearly the whole surface, and it continued present for at least six days, but was not followed by any very well-defined or unusual desquamation.

CASE 47.—*Typhus with Eruption.—Recovery slow. Convalescence, with protracted cerebral symptoms and suppuration of ears.*—This case being rather an unusual one, I give it at length.—Warder in the prison, aged 22; admitted November 8 (5th day). Tongue furred. Typhus rash. Pulse 110.

Nov. 10 (7th day of fever). Pulse 126. Tongue dry in centre. Rash copious. Did not sleep much. Slightly delirious.

Nov. 11 (8th day of fever). Pulse 122. Tongue quite dry. Slept some, but still delirious.

Nov. 13 (10th day of fever). Pulse 134. Tongue very dry. Rash ecchymosed. Has been very quiet. Some sleep.

Nov. 15 (12th day of fever.) Pulse 122. Tongue still dry. Rash fading.

Nov. 17 (14th day of fever.) Pulse 100. Much obscuration of intelligence, and, in particular, slowness of response on asking him to put out his tongue, which is still black and furred. There is, however, no decided coma, and no delirium. Patient has slept. Rash fading.

Nov. 19 (16th day of fever). Pulse 86. Although patient is still in a very deeply typhoid state, with dry tongue, and hardly any appreciable improvement, he is quiet, without delirium or tremor, and disposed to sleep. Makes no complaint, but says, when asked, that he has pain in the back, none in the head. Not a trace of moisture on the skin, which is warm, but not pungently hot. Passes his urine abundantly, and not into the bed, as he did at a former period. Over sacrum there is a slight tendency to congestion, but no breach of surface.

Nov. 22 (19th day of fever). Pulse 88. Tongue clean, but not very moist. Complains of pain in left ear.

Nov. 24 (21st day of fever). Pulse 100. Rash almost if not entirely gone, but patient continues in a peculiar state as regards nervous system. Not comatose, and not delirious; but evidently obscured in intelligence and somnolent. A somewhat livid flushing of face, not so great now as formerly. Says he has no pain in head; but complains of both ears, especially the right, and there are traces on the pillow of bloody discharge from both. Tongue still dry. Patient's friends had requested that his head should not be shaved, in consequence of his occupation as a prison warder. Blister to occiput.

Nov. 26 (23rd day of fever). Pulse 94. Tongue dry. Ears still discharging. Lies in a dreamy state, simulating sleep, and makes no complaint. From this period there was slow but regular convalescence.*

This patient had *no stimulants* throughout the treatment. Compare, as regards this and other points requiring remark, No. 31 (Females), including the Note.

CASE 48.—*Typhus with Eruption—Recovery.*—Porter, aged 30, admitted

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* Still under treatment (December 22nd), though practically he may be said to be in no immediate danger. I fear there is caries of the mastoid cells, and possibly latent tubercular disease.

November 9 (10th day); dismissed November 29. Crisis shortly after admission. *No stimulants.*

Case 49.—*Typhus with Eruption — Recovery.*—Baker, aged 14, admitted November 10 (7th day); dismissed December 8. Pulse arrived at maximum rate (118) on 10th day; afterwards declined gradually to 60. Slight diarrhœa on 8th day. Considerable delirium from 10th to 12th day, and on 12th day rash fading. *No stimulants.*

Case 50.—*Febricula followed by Typhus—Recovery.*—Boy, aged 10, admitted November 12, with feverish symptoms, but without any distinct rash. Convalescent on the 17th. From uncertainty as to fever, however, boy remained in the ward, and on the 29th was seized a second time with feverish symptoms, which proved to be those of true typhus, and for this disease he is now under treatment. *No stimulants.*

Case 51.—*Typhus with Eruption — Recovery.* — Boy aged 12, admitted November 14 (8th day); dismissed December 3. The rash in this case rather faint, but appeared to be on the whole that of typhus with which the symptoms corresponded, the crisis, however, being before the 11th day. *No stimulants.*

Case 52.—*Typhus with Eruption — Recovery.*— Boy, aged 14, admitted November 16 (day of fever not known); dismissed December 10. A rather severe case, considering his age. A good deal of delirium with tendency to contraction of pupils, the pupils having been rather dilated on admission. Maximum rate of pulse 140. Had tartar emetic and opium three days after admission. Fourteen days after this the pulse had very gradually subsided to 78, and convalescence seemed complete, but for some days afterwards the pupils, which were contracted during the delirium, were noticed as preternaturally dilated, and sluggish on the approach of light. *No stimulants.*

Case 53.—*Typhus with Eruption—Recovery.*—Printer, aged 17, admitted November 18 (7th or 8th day); dismissed December 7. A mild case without delirium, and with early crisis. *No stimulants.*

Case 54.—*Typhus with Eruption — Recovery.*— Labourer, aged 28, admitted November 18 (date of fever undecided); dismissed December 14. On the 26th November pulse was extremely rapid and very weak, and the use of wine was begun. Crisis, however, was not particularly slow, and convalescence as usual. *Stimulants*—4 oz. wine.

Case 55.—*Typhus with Eruption—Recovery.*—Labourer, aged 14, admitted November 19 (8th day); dismissed December 16. Pulse rose to maximum rate (130) on 11th day, at which time there was a good deal of delirium, and the rash was much ecchymosed. On 12th day pulse 122, and all the symptoms milder. On 13th day pulse 116, and crisis still in progress. On 15th day pulse 98. Some diarrhœa during the night. On 19th day pulse 70. *No stimulants.*

Note.—This case forms a good example of the early crisis, and at the same time shows the very gradual character of the fall of pulse. The cleaning of the tongue, and the relaxation of delirium, having been equally gradual, it was impossible in this case to fix the day of the crisis unless the 11th, on which the pulse began to fall.

Case 56.—*Typhoid Pneumonia, no Eruption—Death.*—Labourer, aged 24. Admitted November 20, with doubtful symptoms resembling typhus fever, but without rash. Had also symptoms of bronchitis, oppression of breathing and cough. Pulse, 100. Was treated by mustard poultices to the chest, and by the usual cough mixtures. Four days afterwards the rate of pulse had sunk to 92, and appearances were those of convalescence. Three days later, however, pulse had risen again to 122, and patient complained of pain on left side.

Stimulants were now administered (12 oz. wine, and 4 oz. whisky, in all); but symptoms and signs of pneumonia became rapidly developed on right side, and death took place on morning of 29th November, no eruption having been present throughout. On post mortem examination, the whole lower lobe of the right lung was found by Dr. Robertson to be in a state of incipient hepatization. The left lung was normal. It may admit of a possible doubt whether typhus fever had preceded the pneumonia in this case, but there is no positive evidence of typhus, and the symptoms at first were those of an obscure pulmonary affection.

Case 57.—*Typhus with Eruption—Recovery.*—Labourer, aged 30. Admitted November 21 (6th day); dismissed December 17. Maximum rate of pulse, 132 (11th day). A gradual decline of rate to the 15th day, when it remained at 82, tongue being still a little dry, but rash fading. *Stimulants*—wine, 56 oz. all given after the crisis, and as a tonic (perhaps unnecessarily).

Case 58.—*Typhus with Eruption—Death.*—Labourer, aged 38. Admitted November 21 (8th day). Pulse continued progressively rising from 96 to 130, or more. On the 11th day the pulse could hardly be counted at wrist, owing to tremor and *subsultus tendinum*. There was much agitation, and perpetual raving, with decidedly contracted pupils, almost insensible to light. Urine had been passed only twice during three days, and the bowels were costive. *Stimulants*—wine was given from the 10th day, to the extent, in all, of 12 oz., and whisky 4 oz. Died on 25th November at 9.30 a.m.

Case 59.—*Enteric Fever—Recovery.*—Labourer, aged 21. Admitted November 22 (12th day); dismissed December 17. A few rose spots were detected on admission, but eruption was not considered decisive for some days. Bowels, however, were loose from the first, and continued more or less loose throughout, the diarrhœa being particularly severe from the 13th to the 17th day of fever, after which looseness moderated. There was never any distension of belly, flatulence, or special tenderness in the right iliac fossa. The pulse varied from 90 to 106 between the 12th and the 23rd day, the variations presenting no definite order (*e.g.*, the successive notes were 106, 104, 92, 94, 90, 104, 94). *No stimulants.* The only medicine given was lime water, with the exceptions of an opiate on a single occasion, and an astringent mixture (catechu and hæmatoxylon) for a few days after admission.

Case 60.—*Typhus with Eruption—Delayed Crisis, with unusual variations in Pulse—Recovery.*—Labourer, aged 56. Admitted November 23 (10th day); dismissed December 15. This was one of the most remarkable cases of the series, and as the details of it are quite peculiar, and to me inexplicable, I give them here by way of contrast to other cases here recorded. The patient was a peculiar-looking, rather pale and sallow labourer, older-looking than his age is stated on the card, and having a good deal the appearance commonly associated with chronic disease of the abdominal viscera, of which, however, no indications could be discovered in the history or physical signs, so far as observed.

Nov. 24 (10th day).—Typhus rash not very bright, but abundant. Complexion rather pale and sallow, but otherwise a strong-built man. Intelligence considerably obscured, without any approach to coma. Rambles and mutters a little. No agitation or tremor. Is deaf. Tongue dry; not much sordes. Pupils rather small. Pulse 124. Had some sleep last night.

Nov. 25.—Wine, 4 oz. (continued daily).

Nov. 26 (12th day).—Pulse 112. Tongue very dry. Slept very little on account of having to rise every half-hour to micturate. Slight delirium during the night.

Nov. 27 (13th day).—Pulse 132, soft. Counted an hour later, 124. Tongue much coated. Slept a little, but some raving. Change wine for whisky, 4 oz.

Nov. 29 (15th day).—Pulse 116. Tongue cleaning. Still very restless during the night, and raved a good deal.

Nov. 30 (16th day).—Pulse 110. Tongue dry in centre. Slept a little. No delirium.

Dec. 3 (19th day).—Pulse 114. Tongue still dry. Slept well. Complains of cough, and has a slight muco-purulent expectoration.

Dec. 5 (21st day).—Pulse 124. No cause for this rise in pulse can be discovered; and patient is himself so free from uneasy sensations as to be talking about rising. Tongue also is pretty clean. Patient drinks abundantly of milk, and takes porridge with relish. Slept well, and is pretty intelligent, but obviously very weak. Nurse says the cough is better; and during the last few days patient has several times been on his legs of his own accord, without any appearance of delirium.

Three hours after the above, pulse 92; at night, pulse 110.

Dec. 8.—Pulse 108. Complains of nothing but weakness.

Stimulants—4 oz. of wine daily, given from 11th day, and exchanged for 4 oz. of whisky from 13th day. The latter continued during convalescence, to the amount of 68 oz. in all.

NOTE.—The extraordinary instability of the pulse in this case is not accounted for by anything in the symptoms, unless it may have been due to the slight bronchitis, or to the stimulants administered operating upon a peculiarly constituted nervous system. An examination of the chest gave evidence of no serious complication, and no account could be got from the patient leading to the suspicion that he was subject to any form of organic disease. The urine was non-albuminous, and the abdomen natural. The delirium, though considerable, and rather protracted, was not on the whole very formidable, and the appetite for food was more than average. The stimulants could not be said to have been administered in intoxicating doses, though they may possibly have co-operated in disturbing the crisis.

CASE 61.—*Typhus with Eruption—Bronchitis—Recovery.*—Porter, aged 39. Admitted November 26 (9th day); dismissed December 17. In this case, probably from bronchitis on admission, rash had a very deep colour, and the pulse reached a rate which in pure typhus is rarely consistent with recovery. On the 10th day it could scarcely be counted, owing to weakness, but seemed to number about 148 with slight irregularity. Patient was, however, perfectly intelligent, and slept pretty well. Tongue also was moist. In consequence of these symptoms 4 oz. of wine given. Next day pulse 130, soft but not very feeble, and regular. Other symptoms as before, but cough with expectoration of mucus still of a character to excite anxiety. No dulness on percussion, however, over lung. 1-8th gr. of tartar emetic was given every two hours, and the wine increased to 8 oz. From this period the decline of the pulse was regular and uniform, and on the 21st day of fever the patient was fully convalescent, with a pulse of 86. *Stimulants*—71 oz. of wine in all, afterwards one pint of beer daily.

NOTE.—This case is a remarkable contrast to the last, inasmuch as, notwithstanding a very acute and dangerous complication, forcing the pulse up to an extreme rate of rapidity on the 10th day of the fever, the crisis and the convalescence were nearly as regular as in a normal case. The good effects of tartar emetic

in small and repeated doses were seen in this and several other cases of the series, both among the males and females, during the time when bronchitis was prevailing. The indications for this remedy, and the preferable modes of using it in acute diseases of the chest, according to my experience, have already been described in "Clinical Medicine," pp. 53 and 643.

Case 62.—*Typhus with Eruption—Profuse sweating—Recovery.*—Weaver, aged 25. Admitted November 26 (8th day); dismissed December 16. An early crisis with gradual lowering of pulse up to 14th day, when skin became moist, and on 15th day a profuse sweat followed with a still farther fall of the pulse, and a continued convalescence. *No stimulants.*

Note.—This was one of the very few cases (certainly not exceeding three or four among those at present under review) in which a favourable crisis was attended at any period by profuse sweating. A very slight degree of moisture on the skin was not uncommon, but in a considerable proportion of instances even this was not appreciable. In the present instance the sweating was so marked, and so accurately coincident with the period between the 14th and 15th day, that it might have been noted as marking a critical day. But the strikingly exceptional character of the phenomenon deprives it of much of its claim to consideration in this respect, while the true critical day must in this case be removed much farther back, as is evident from the perfectly regular though slow decrement of the pulse, at least from the 9th day onwards, as will appear from the following summary of notes:—8th day, pulse, 130; 9th, 114; 12th, 110; 14th, 104 (moisture on skin); 15th, 98 (sweating); 17th, 84; 20th, 82. It is probable that the much more rapid pulse on the day of admission was due to disturbance caused by removal, and it ought not, therefore, to be reckoned as a true maximum rate.

Case 63.—*Typhus with Eruption—Recovery.*—Potter, aged 13. Admitted November 28 (7th day); dismissed December 21. A perfectly normal case with nothing remarkable except the high rate of pulse, 160 on 9th day, without any bad symptom. *No stimulants.*

Case 64.—*Typhus with Eruption—Recovery.*—Moulder, aged 18. Admitted November 28 (8th day); dismissed December 21. The pulse in this case is not noted as having risen above 96. There is, however, a gap in the notes from the 8th to the 11th day, and the case was in all other respects normal, though rather severe. *No stimulants.*

Case 65.—*Typhus with Eruption.*—Soldier (branded as a deserter), aged 36. Admitted November 29 (8th day). Evidently an intemperate subject, with considerable delirium on admission, and a tendency throughout to tremor. The maximum rate (126 or more) of pulse, however, was attained between the 9th and the 12th day, notes being deficient in this interval. Notwithstanding a very profuse perspiration on 9th day, there was no appreciable crisis. From the 12th day the decrement of the pulse was regular and progressive up to the 17th day, when it numbered 72. The symptoms meanwhile, though always threatening, were indicative of a favourable change after the 14th day. *Stimu-*

lants and treatment—On admission 5 drops Battley, and 1-8th gr. tartar emetic, every two hours; slept well after the third dose. On night preceding 14th day had 6 oz. whisky; next night only 3 oz., afterwards 8 oz. as a daily order from the 17th day; on 18th day tartar emetic in 1-12th gr. doses resumed on account of cough and expectoration; on 19th day four or five commencing bed-sores detected, and carefully treated by washing and attention to posture and support. Bed-sores healed, and patient perfectly convalescent at time of going to press, but still under treatment. *Stimulants*—94 oz. whisky in all.

Case 66.—*Typhus with Eruption—Recovery.*—Calenderer, aged 24. Admitted November 29 (4th day); dismissed December 21. With the exception of more than usual delirium (beginning on 7th day) the case had a perfectly normal course, and the maximum rate of pulse was not more than 126, its character being good throughout. The patient had a strong tendency to grimacing throughout the disease, and constantly said he was "fine." He took food well throughout, and had a pretty clean tongue, but slept very little until the crisis was established, the pulse then falling to 70. *No stimulants.*

Case 67.—*Typhus with Eruption—Recovery.*—Cooper, aged 18. Admitted November 29 (6th day); dismissed December 22. Maximum rate of pulse, 132. The decrement perfectly regular, and the crisis gradual from 12th day. *No stimulants.*

Case 68.—*Typhus with Eruption—Recovery.*—Boy, aged 10. Admitted November 30; dismissed December 22. Duration of illness unknown. Pulse 120, and convalescence progressive almost from date of admission. *No stimulants.*

II.—FEMALES.

In the female ward there were 58 cases in all admitted during the period under review, to which may be added one child not numbered in the series, having been found to be, in fact, free from disease, though admitted with its mother under suspicion of fever. Of these 58 cases, 50 were judged to be cases of typhus; one (Case 29) doubtfully, but still probably enteric fever; four (Cases 3, 7, 9, 56) undefined fever or febricula; two (Cases 14, 24) pneumonia; one (Case 25) was a case of cancrum oris in a child convalescent from typhus on admission. As in the male ward, this statement includes all the admissions during the period stated; among the rest several cases admitted very late in the diseases, and almost in a state of fatal collapse.

Case 1.—*Typhus with Eruption—Recovery—Phlegmasia dolens during convalescence.*—A warehouse girl, aged 23, admitted September 27; dismissed November 10. The pulse rose to a maximum rate of 120, at which it continued for several days, and then slowly declined, with some fluctuations, to 76. The rash continued visible for more than ten days after admission. After convalescence was nearly complete, the left groin became painful, and swelling of the limb occurred, which was treated by hot fomentations, friction, and flannel bandages. This complication delayed her discharge for several weeks. During the protracted convalescence 62 oz. of wine were given in moderate daily quantities.

Case 2.—*Typhus with Eruption—Recovery.*—Married, aged 47. Admitted September 28 (date of fever uncertain); dismissed October 20. The rate of pulse in this case reached its maximum on the day of admission, declining regularly from 120 to 84, during a gradual crisis extending over eight days. *Stimulants*—59 oz. of wine in all.

Case 3.—*Febricula, associated with a first Menstruation—Recovery.*—Servant, aged 19, admitted September 28, and on October 1st removed to a general medical ward.

Case 4.—*Typhus with Eruption—Recovery.*— Servant, aged 16, admitted September 28 (8th day); dismissed October 24. The pulse in this case fluctuated a good deal, and on 17th day of fever was nearly as frequent as on the 12th. (Query—Was this owing to administration of stimulants?) The rash was very brilliant, and with an almost scarlatinoid character in the midst of the mottling. On the 12th day the pulse was 128; 13th day, 114; 14th day, 124; 16th day, 110; 17th day, 120. During the latter part of this period the patient had a good deal of whisky, and the crisis was, I think, manifestly delayed, and delirium increased under this treatment. She had in all of whisky about 30 oz. (See note to Case 4, Males; also Note to Case 17 below.)

Case 5.—*Typhus with Eruption — Recovery.*—Married, aged 25. Admitted September 29 (5th day); dismissed October 29. A mild case, with moderately early crisis. The pulse, however, did not sink decidedly till the 12th day, having varied from 112 to 120 during the height of the fever. *No stimulants.*

Case 6.—*Typhus with Eruption—Recovery.*—Spinner, aged 17, admitted October 1 (8th day); dismissed October 17. The pulse reached its maximum rate (110) on the 10th day, and then gradually subsided; convalescence, however, being incomplete till after the 14th day. *No stimulants.*

Case 7.—*Febricula—Recovery.*—Laundry-maid, aged 32, admitted October 2; dismissed October 17. No decided rash, and patient did not come from a locality in which typhus had occurred, though, as laundry-maid in a hotel, she might have been unwittingly exposed to infection. She was removed to a medical ward on subsidence of fever. *No stimulants.*

Case 8.—*Typhus with Eruption—Recovery.*—Factory girl, aged 24, admitted October 4 (8th day); dismissed October 22. A mild case, the maximum rate of pulse noted 94, but from gaps in the report it is possible it may have been higher. The crisis complete on the 14th day. *No stimulants.*

Case 9.—*Typhus (?)—Recovery.*—Girl, aged 10, admitted October 7; dismissed October 24. This case appears to have been noted as typhus at the time, but the report is deficient in details, and does not state that rash was present. The case might therefore be regarded as doubtful; but from her sister being admitted the same day with a brilliant rash, I have included it within the typhus series. *No stimulants.*

Case 11 (sister of the preceding). — *Typhus with Eruption — Recovery.*— Girl, aged 13, admitted October 7 (7th day); dismissed October 29. In this case the rash was very distinct, and the pulse very rapid, on the 10th day 138. The tongue also dry and furred. Convalescence, however, was rapid and decided, the pulse having sunk to 100 on 13th day, and the tongue being moist. Patient slept well throughout, and had no delirium, although the face was very much flushed. *No stimulants.*

Case 12.—*Typhus with Eruption—Recovery.*— ——, aged 30, admitted October 8 (7th day); dismissed November 9. The patient had sore throat on admission, with difficulty of swallowing; and had the rash not been decidedly that of typhus, scarlatina or diphtheria might have been apprehended. The pulse rose regularly in frequency up to the 15th day, when it attained a maximum rate of 128, declining with equal regularity till the 20th day, when it numbered 80, and convalescence was fully established. There was scarcely any decided delirium, but on the 17th day the breathing was irregular, and there was inarticulate moaning. The tongue did not begin to clean till the 18th day. *Stimulants*—In the course of this rather protracted fever patient had 62 oz. of wine, and 3 oz. of whisky, which appeared to be demanded by her very exhausted condition. (Compare Cases 4 and 17, and see Note on the latter.)

Case 13.—*Typhus with Eruption—Recovery.*—Married, aged 22. Admitted October 10; dismissed October 29. A rather mild case. Maximum rate of pulse 120. *No stimulants.*

Case 14.—*Pneumonia—Recovery.*—Servant, aged 19. Admitted October 10; removed to medical ward, October 29, and treated throughout in a separate apartment. This patient had all the symptoms of well-marked, acute pneumonia, of five days' standing. Hepatization of lower lobe of left lung was advancing on admission, and on the 12th October I judged the symptoms to be of such severity as to justify a pretty full bleeding at the arm, which was followed by immediate relief, the blood being very strongly buffed; 1-6th gr. doses of tartar emetic were at the same time exhibited, and next day the disease had evidently undergone a crisis, the patient being in a profuse sweat, but otherwise comfortable. From this time no medicine was given, and convalescence was quite uninterrupted. *No stimulants.*

Case 15.—*Typhus with Eruption—Recovery.*—Married, aged 34. Admitted October 11 (11th day); dismissed October 26. A perfectly normal case, without remarkable symptoms. Maximum rate of pulse 128. *No stimulants.*

Case 16 (daughter of preceding).—*Typhus with Eruption—Recovery.*—Girl, aged 9. Admitted October 11 (10th day); dismissed October 26. A perfectly simple and mild case. Maximum rate of pulse 124. *No stimulants.*

Case 17.—*Typhus with Eruption—Recovery.*—Factory girl, aged 19. Admitted October 12 (5th day); dismissed Nov. 5. This case forms a good illustration both of the regular course of typhus with early crisis, and of the principles of treatment adopted in most of the cases here recorded. I therefore give the details.

Oct. 12 (5th day of fever—this fact carefully tested.) Tongue red and moist; no fur. Typhus rash very abundant. Sleeps pretty well. Pulse 126.

Oct. 15 (8th day).—Slept. Tongue dry and cracked. Skin hot. Eyes suffused. Pulse 124.

Oct. 16 (9th day).—Slept none; very delirious. Tongue dry and cracked. Sordes on teeth. Pulse 130. *Vespere*—wine.

Oct. 18 (11th day).—Pulse 124. Skin hot and dry. Rash abundant, but not deep in colour. Tongue dry and brown. Rested better last night; without active delirium, and seems more sensitive to-day. Omit wine.

Oct. 19 (12th day).—Pulse 106. Tongue cleaner. Rash beginning to fade.

Oct. 21 (14th day).—Pulse 100. Tongue moist and red. Bowels regular. Feels better, and takes a little food.

Oct. 22 (15th day).—Pulse 90. Tongue moist and cleaning. From this period convalescence progressive. Total amount of *stimulants*—6 oz. wine, between evening of 9th and morning of 11th day.

Note.—In this case I consider the true critical period to have been between the 9th and 11th days; and the improvement was indicated on the latter by the fall of the pulse, as well as by the more quiet and sensitive condition of the nervous system. On the evening of the 9th day the patient was so much exhausted, the delirium so considerable, and the typhoid condition altogether so apparent, that Dr. Robertson commenced the administration of wine, which, however, I withheld on the next day in anticipation of a crisis. Had the stimulants been largely pushed, I think it not improbable that the rate of the pulse would have been maintained for several days, as in Case 4 (Females), and perhaps also Case 12 (Females). In Cases 4 and 8 (Males), however, the

administration of stimulants did not appear to retard the crisis; and I by no means wish to assert that stimulants, moderately and properly employed, will have this effect, but only that the tendency of all unnecessary or excessive use of them is in this direction, and therefore I regard it as of great importance to determine accurately the limits within which their use is required, or, if not necessary, is practically useful and expedient.

Case 18.—*Typhus with Eruption—Severe Diarrhœa—Recovery.*— Factory girl, aged 18. Admitted October 12 (4th day); dismissed Nov. 7. This was a perfectly normal case up to the 10th day, the pulse maintaining a rate from 120 to 124. On the 10th day pulse 128. The tongue moderately furred, not dry. The rash abundant. The skin hot and dry. No delirium. Patient, however, felt sick and weak; and this was the commencement of a severe diarrhœal attack, which extended, with remissions, nearly to the 18th day of the disease. The first effect of the diarrhœa was a very decided diminution of the rate of the pulse, which on the 11th day numbered 98, but was soft and weak, the patient having had little sleep. At this time a very small quantity of wine was given; but as it did not appear to do good, or to be readily taken, it was omitted. On the 13th day the diarrhœa was less; pulse 126. On 14th day pulse 124. On 18th day pulse 86: state of the bowels improving. On the 20th day pulse 80, and patient fully convalescent. *Stimulants*—wine 2 oz. in all.

Note.—Diarrhœa has often been spoken of as a critical phenomenon in typhus; and occasionally it is observed to concur with the crisis under circumstances which might warrant such a belief. It may also be said that diarrhœa at any period of typhus fever, and even artificial purgation determined by medicines, are often followed by an immediate diminution in the rate of the pulse, and even by alleviation of the symptoms. The facts, however, of this subject appear to require much more careful investigation than they have yet received; and the present case, like many others that have occurred to me at various times, presents but little evidence of a really critical diarrhœa, the effect of the complication having apparently been to retard the crisis—which might reasonably have been expected some time before the 14th day—to a somewhat later period. It is consistent with my observation, however, that diarrhœa, whether critical or not, is scarcely ever a dangerous symptom in typhus; and accordingly I did not think it necessary in this case to continue the administration of stimulants when they appeared to disagree.

Case 19.—*Typhus with Eruption of remarkably hæmorrhagic character, and with considerable Menorrhagia. Diarrhœa. Fatuity after convalescence. Suppuration of the Ears—Recovery.*—Married, aged 42. Admitted October 13 (11th day); dismissed December 10. On admission, the shoulders, body, and legs were covered with petechiæ, like spots of purpura. Pulse 106. Skin not very hot. In the course of the next five days the tongue became dry, and the spots deepened in colour; but the rate of the pulse diminished, first to 98 and then to 84. It was ascertained at this time through the nurse that the patient had

been menstruating almost since admission, and that the discharges were excessive and clotted. The vagina was accordingly plugged, with the effect of stopping the discharge. During the next eight days the pulse ranged between 80 and 94, the typhus rash being at the same time in course of disappearance, but the tongue remaining dry and the bowels being rather loose. Patient had also suppuration of one of the ears, and was very deaf. A daily allowance of 4 oz. of wine given at this period, and which was afterwards increased. On 3rd November the following note made:—"Convalescence has been very lingering, but no typhoid symptoms for several days. Pulse 80, feeble. Expression is that of exhaustion without distinct fever, unless it be that amid general pallor of surface, there is a very indistinct flush on cheeks. Tongue still rather dry, but quite clean. Rash gone. Skin cool, and rather deficient in moisture, especially on palms of hands, which are perfectly dry. Patient is apparently quite sensible of her own condition, and asks questions with some interest, but with great appearance of languor. At times she gives utterance to expressions which betoken incoherence; but from her extreme deafness the mental state can hardly be appreciated. Discharge from ears, however, has stopped, and nurse reports that she is stronger." (The urine was examined, and found non-albuminous.) From this period the convalescence was slow as regards the mental state, the patient remaining quite imbecile for a considerable time; but it seems probable that this may have been in part a weakness preceding the fever. The total amount of *stimulants* given was 124 oz. wine.

Note.—I have given this case with considerable detail, because it is one of a rather unusual character. The effect of menstruation, or of uterine hæmorrhage, on the course of fever has yet to be studied; and, *vice versa*, the effect of fever on this evacuation has probably received too little attention from observers. In the present instance there is a deficiency of exact dates; but the menorrhagia would appear to have pretty closely coincided with the phenomena of the crisis. It is difficult to judge how far it modified these; but unquestionably it had the effect of making the convalescence remarkably slow, the tongue having continued dry and the nervous system unsettled long after the fall of the pulse. It is possible, however, that the suppuration of the ears may have had something to do with this state of the nervous system. In a case of enteric fever, to which I have made a brief allusion in "Clinical Medicine," p. 135, the patient died with remarkable suddenness on the 10th day of the fever, at the very commencement of a menstrual period, and without any considerable hæmorrhage either from the uterus or from the bowels. In the present case, a far more considerable hæmorrhage, beginning about the same period of typhus or a little later, had no such disastrous effect; but neither can it be said to have proved critical in a favourable sense. The administration of stimulants in the latter part of the convalescence was in accordance with the debilitated state of the patient, and given chiefly to aid the nutrition.

Case 29.—*Typhus with Eruption—Recovery.*—Girl, aged 11. Admitted October 17 (6th day of fever); dismissed November 7. This was a very decided

case of early crisis, the fall of the pulse having occurred even before the 10th day, and the maximum rate, 140, being recorded on the 8th day. Increment and decrement were perfectly regular, as may be seen by the following list of successive observations taken from the 6th to the 17th day:—130, 135, 140 (8th day); 132 (10th day), 112, 60. The high rate of the pulse might have suggested danger; but, on the other hand, the favourable age, and the absence of severe symptoms and of complications, with the exception of a little bronchitis, tended to repress all alarm. *No stimulants.*

Case 21.—*Typhus with Eruption—Diarrhœa—Recovery.*—Married, aged 54. Admitted October 18 (beginning of 9th day); dismissed November 9. In this case considerable diarrhœa occurred from admission onwards to the crisis, with the effect of producing considerable exhaustion, but not, I think, of modifying the course of the fever in any decisive manner, unless, indeed, by delaying the crisis, which occurred probably about the 15th or 16th day. *Stimulants*—wine, 32 oz.; whisky, 2 oz. in all.

Case 22.—*Typhus with Eruption—Recovery.*—Girl, aged 11. Admitted October 25 (7th day); dismissed November 17. Another case of early but slow crisis, the maximum pulse rate having been from 7th to 10th day, and the decline from this period perfectly regular and gradual, as will be made manifest by the following successive notes; the very slight rise upon the 16th day being fully accounted for by the premature rising of the patient from bed:—

7th day,	pulse	116.	(Recent admission.)
10th day,	"	112.	(Tongue much loaded.)
13th day,	"	98.	(Tongue moistening.)
15th day,	"	74.	
16th day,	"	80.	(Patient out of bed too soon.)
19th day,	"	56.	

There were no unfavourable symptoms. *No stimulants.*

Case 23.—*Typhus with Eruption—Abortion—Recovery.*—Married, aged 29. Admitted October 25 (8th day); dismissed November 15. Patient was delivered of a still-born child (at the 6th month) four days before admission, and on admission had a rather weak pulse, numbering 128, but no other indication of danger. On the 10th and 11th days the pulse was 120; the rash abundant; the tongue dry; the lochia rather scanty: no pain of abdomen; a good deal of delirium. On the 12th day the pulse was 114, and the delirium seemed relaxing; but on the 14th day there was again an aggravation of delirium, and of typhoid symptoms generally, with pulse at 120. On the 16th day, however, the pulse was 64, and all the dangerous symptoms had disappeared. *No stimulants.*

Note.—The present is one of the few cases in which there appears to have been a secondary rise in the rate of pulse after a fall about the 12th day. In the great majority of instances, when such a fall occurs, the decrement in the pulse-rate continues perfectly regular, even when the delirium and other typhoid symptoms do not give way for some days longer, as is illustrated by many of the cases of the present series. I am strongly disposed to believe, therefore, that the exceptional fact in this case was due to some slight form of febrile irritation connected with the premature delivery, which, however, was in other respects attended by a remarkably slight disturbance of the usual course of the fever. I have very little doubt that the administration of stimulants would have been injurious in this case, yet

it is almost certain that rules of practice too commonly followed would have led to their administration, if not at first, certainly on the recurrence of typhoid symptoms at the 14th day of the fever.

Case 24.—*Pneumonia with incipient Delirium Tremens or Exhaustion, the effect of a debauch—Death.*—A prostitute, aged 20. Brought into hospital in a moribund state from acute disease which was ascertained to be mainly pneumonia, but with symptoms of grave nervous disturbance and of collapse. Died within an hour or two after admission. On post mortem examination the left lung found to be almost completely hepatized, the liver much enlarged, with considerable fatty degeneration, and the whole body with a strong odour of alcohol.

Case 25.—*Cancrum oris after Typhus Fever—Improvement.*—A very young girl. Admitted October 11; removed to a surgical ward November 18. The upper lip was completely perforated with great loss of substance, and the alveolar process of the upper maxillary bone was laid bare upon the right side. Poultice, after water-dressing, with Condy's liquid. Chlorate of potash given internally, and afterwards a quinine mixture, 2 oz. of wine daily, and good nourishment. Under this treatment a very marked improvement took place, and when the parts were completely in a healing state, the girl was placed under the care of the surgeons for further treatment, if deemed expedient.

Case 26.—*Typhus with Eruption.—Fall out of bed—Paralysis of the portio dura—Recovery.*—Married, aged 38. Admitted October 28 (4th day); dismissed November 13. The fever in this case was dated with great accuracy from a sudden shivering fit, and taken in connection with the fact the following details are of importance. Up to the 8th day patient was perfectly intelligent; pulse varying from 110 to 120. An opiate was given on the evening of the 5th day on account of sleeplessness. On the 9th and 10th days there was some delirium during the night, during which the patient fell out of bed and received some injuries about the face, without however complaining of any pain of head, or other special symptom of cerebral injury, except that a slight paralysis of the left side of the mouth was noticed for the first time on the 10th day, the pulse being at the same time 140, and small, the tongue dry at the tip, and the pupils small but equal. In the doubt as to the real character of this paralysis, it was considered expedient to apply a blister to the nape of the neck, and to administer 6 grs. of calomel, which acted pretty freely. Next day (11th of fever), the pulse was 128, and the patient had raved a great deal. 4 oz. of wine were now given, with authority to increase it or withdraw it according to the observed results. During the next two days pulse fell to 106 (13th day); the tongue became moister, and the delirium ceased, patient obtaining some sleep; the typhus rash remained visible throughout these occurrences, and the wine was continued. On the 14th day symptoms and expression of the patient gave indications of continued improvement. Pulse 108. Rash fading. Paralysis of left side of mouth even more distinct than before, but no other cerebral or paralytic symptom. Hearing quite acute. Considerable pain of head, but a little frontal headache. On the 18th day convalescence was almost complete. Pulse 100. *Stimulants*—44 oz. of wine in all.

Note.—In this case it is exceedingly difficult to disengage the symptoms connected with the fever from those which may possibly have been produced by the fall; but with the exception of a slightly protracted convalescence, and a slight paralysis of the *portio dura* above-mentioned, there is no decisive indication

that the course of the fever was in fact modified by the fall. The pulse attained its maximum rate on the 10th day, and this date coincided with the probable period of suffering from the result of the injury, the pulse-rate being also unusually high. After the 11th day the delirium ceased, and the pulse fell to about the usual rate at this period of the fever, the phenomena of the crisis going on undisturbed, but rather slowly. The wine was carefully administered in very moderate quantities, and continued only in so far as it appeared to do good.

Case 26.—*Typhus with Eruption—Recovery.*—Factory worker, aged 24. Admitted October 29 (9th day). There was diarrhœa on admission, perhaps from medicine. Dismissed November 27. There was no dangerous symptom in this case. The crisis appeared to take place from the 11th to the 18th day, the pulse gradually falling from 114 to 68. There was considerable sore throat at the period of the crisis, but no delirium at any time, and good sleep throughout. *No stimulants.*

Case 28.—*Typhus with Eruption—Broncho-pneumonia—Recovery.*—Milliner, aged 16, admitted October 31 (5th day); dismissed November 28. In this case the presence of a slight but quite appreciable broncho-pneumonia introduced a disturbing element into the fever, which was, however, a very well-marked case of typhus, with the usual eruption. At the end of the first and beginning of the second week the pulse rose to 130, and on the 11th and 12th day it varied from 116 to 120, the pulmonary affection being treated by 1-8th grain doses of tartar emetic, and being attended by distinct lividity. From the 16th to the 19th day the pulse varied from 108 to 114; the typhoid symptoms and the rash disappearing, and the pulmonary affection being much improved. After this the convalescence was rapid and decided. *No stimulants.*

Case 29.—*Enteric Fever* (?)—*Recovery.*—Married, aged 24. Admitted November 2 (12th day); dismissed November 18. When admitted patient had considerable diarrhœa; and history, together with ill-defined traces of eruption, corresponded generally with character of enteric fever. But, about four days after admission, the symptoms relaxed, and a certain amount of acne prevented conclusive diagnosis as regards the rose spots, which ceased at that date to be visible. Convalescence was complete before the 20th day, and the diagnosis therefore remained indeterminate. *No stimulants.*

Case 30.—*Typhus with Eruption—Death.*—Servant, aged 55 (?), admitted late in the disease (November 3) date unknown. The rash abundant, with large ecchymosed spots. Pulse 118. Next day pulse 126. Perspiring profusely. Pupils small. On morning of 6th November, within 48 hours after admission, died. *Stimulants*—4 oz. wine, 4 oz. whisky. This patient looked much older than the age stated, and was extremely emaciated; but on post mortem examination the case seemed to have been, as supposed during life, one of pure typhus in an aged and exhausted subject.

Case 31.—*Typhus with Eruption—Retarded crisis and secondary Fever—Suppuration of Ears—Recovery.*—Married, aged 36. Admitted November 3; dismissed December 10. This is a rather exceptional case, somewhat similar to No. 47 in the male series, and as all the essential facts of it are very clearly noted, I give details. Admitted 7th day of fever. Pulse 110. Tongue dry. Faint rash.

Nov. 5 (9th day of fever).—Pulse 120. Tongue furred. Sleeps a little. No delirium.

Nov. 6 (10th day of fever).—Pulse 120. Tongue dry. Sleeps very quietly. Seems quite intelligent. Rash pretty deep in colour, and ecchymosed.

Nov. 7 (11th day of fever).—Pulse 124. Tongue very dry. No delirium.

Nov. 8 (12th day of fever).—Wine 4 oz. ordered, and repeated up to Nov. 10.

Nov. 10.—Pulse 102. Wine exchanged for whisky in like quantity.

Nov. 11 (15th day of fever).—Pulse 100. Tongue dry and furred. Extremities cold. Lies very quiet, without delirium.

Nov. 13 (17th day of fever).—Pulse 88. Tongue cleaner and moister. Sleeps a good deal.

Nov. 15 (19th day of fever). Pulse 96. Tongue appears clean, but she does not put it out without great difficulty. Complains of no pain, but lies in a very passive state.

Nov. 16 (20th day of fever).—Pulse 100. Much sordes on teeth, and a good deal of moaning and anxious expression. Patient, however, is able to reply to questions, though disposed to sleep much, with occasional tossing. Pupils rather dilated than contracted, but quite mobile. No active delirium. Increase whisky to 6 oz. daily. Apply a blister to the head.

Nov. 17 (21st day of fever).—Pulse 92. Seems better, but has still the anxious expression. Tongue clean.

Nov. 18 (22nd day of fever).—Feels much better; complains only of weakness. Tongue clean.

Nov. 21 (25th day of fever).—Pulse 86. Convalescent. After this the patient had no bad symptom. The left ear, however, suppurated freely for some days. The whisky was omitted, and beer given during the convalescence. *Total stimulants*—8 oz. of wine, and 66 oz. whisky.

Note.—This is a very remarkable, and was at the time a very embarrassing case, being one of the very few in which, after a distinct crisis, there was a relapse of dangerous symptoms without evident cause. The primary fever distinctly began its crisis between the 11th and the 14th day; and although the patient showed a degree of typhoid exhaustion which appeared to require stimulants, the pulse continued to fall till 17th day, when it had subsided to 124 from 88, the other symptoms all corresponding with the idea of a favourable crisis. Under these circumstances I should, in ordinary cases in which stimulants had been given, have abandoned or much diminished the stimulants, and awaited the convalescence; but on 19th day in this case there was again a rise of the pulse, and the state of the nervous system arrested attention. Next day the sluggish typhoid state, with tendency to dilated pupils, but without either positive coma or delirium, and with a pulse still rising in frequency, caused the gravest apprehensions, which, however, within the space of another 24 hours were relieved by a second critical fall of the pulse, after which the patient passed into full convalescence; this second crisis being attended by suppuration of the left ear. It seems not improbable that the cause of the secondary fever was some obscure disorder attended by structural change at the base of the brain, and relieved by the suppuration of the ear. This view corresponds with what has been observed by others. Thus, Dr. Murchison has "known intense headache and delirium occur during convalescence, and cease at once on the appearance of discharge

from the ear." Dr. G. A. Kennedy relates instances where otorrhœa was preceded by profound coma, dilated insensible pupils, and involuntary stools. Graves records an instance where there "was reason to believe that inflammation of the outer ear spread to the membranes of the brain." In Dr. Graves' case, however, as recorded at page 190 of Dr. Neligan's edition, vol. i., there is no positive evidence that the case was typhus fever, nor does the cerebral affection appear to have succeeded a distinct primary crisis as in the present instance; it was, moreover, ushered in by distinct headache, sudden vomiting, and rigors, all of which symptoms were absent in the present case. The pupils, in the cases recorded by Dr. Kennedy, were dilated; and though this symptom was not very marked in the present case, it attracted attention from being the opposite of what is usual in true typhus, in which, when the brain is affected, the pupils are commonly contracted or natural. In Case 47 of the male series there was a somewhat similar prolongation of the fever, attended by a somnolent state very like the coma of enteric fever, and here, too, there was suppuration of the ears coincident with a rise of the pulse about the 21st day of the fever. Although the fact is not noted, my recollection is very distinct that in this case also the pupils were dilated during the relapse, which was ushered in by pain in the left ear, and by a somewhat livid flushing of the face, without, however, either headache, vomiting, or delirium. The two cases are probably precisely similar in their pathology, whatever it be; and in this point of view it is important to remark that the male patient, who was understood to have been a temperate man (I suspect it was otherwise with the woman now under consideration), made an equally good recovery without any stimulants being administered from first to last. How far, therefore, the stimulants were superfluous, and how far needful in the present case, I have no means of determining.

In both cases the head was blistered, and the improvement followed closely upon the blister. In neither case was any special internal remedy administered. I may add to this experience another fact which occurred about the same time. One of the medical assistants in the hospital, who was seized with typhus, and was under the care of Dr. Buchanan, senior, and myself, had nearly the most protracted typhoid symptoms I remember to have ever witnessed, together with a degree of prostration which at one time hardly allowed a hope of recovery; and in this case also a partial crisis preceded the worst symptoms, which were at their height about the 21st day of the fever—the rash, however, not having completely vanished. Here also a blister to the head, which acted with unusual severity, appeared to be followed by a very decided improvement and a permanent

crisis. There was, however, no suppuration of the ears; and the pupils in this last case were not dilated. All the three cases are sufficiently exceptional to merit this comparatively lengthened note.

Case 32.—*Typhus* (?), *no Eruption—Recovery.*—Married, aged 22. Admitted November 4 (12th day of fever); dismissed November 12. This patient was allowed to go home in early convalescence on account of the doubt as to the character of the fever, arising from the absence of eruption. The history, however, both as to locality and as to the suspicion otherwise of previous contagion, seems to indicate that it may probably have been a case of typhus, having a moderately early crisis, and in which the rash had disappeared before admission. Not included in *typhus* series. *No stimulants.*

Case 33.—*Typhus with very slight Eruption, somewhat resembling Rose Spots—Recovery.*—Mill girl, aged 21. Admitted November 5 (4th day of fever); dismissed November 22. It might be possible to raise a doubt about this case; but I feel no doubt in my own mind, and have therefore included it in the list of typhus cases. The rash was very faint, and resembled rose spots at first; but the intermediate mottling was that of typhus, and the symptoms corresponded with this view. The pulse, however, subsided before the 11th day, and the case was therefore a very brief and favourable one of typhus, distinguished as such only by the rash. Had this been absent, the case must have been recorded as febricula. I have seen, however, many cases of this kind, and a few in which the crisis was so very early (8th or 9th day), and the rash so indistinct, that nothing but their association with other cases of typhus in the same family would have justified the diagnosis. I believe, however, that every epidemic of typhus, narrowly watched, will be found to furnish a proportion of cases, especially in children, in which the disease is really typhus, though the symptoms are strictly those of febricula. *No stimulants.*

Case 34.—*Typhus with Eruption in a very stout woman—Bronchitis—Death.*—Married, aged 45. Admitted November 5 (13th day); having a copious ecchymosed rash. Pulse 120. There was slight typhoid delirium, but the leading symptoms were of obstructed respiration from bronchitis, with considerable mucous accumulation, and a somewhat livid complexion. Was treated by mustard poultices to chest, cough mixture, wine and whisky, with 1-8th gr. tartar-emetic every three hours. She died on 7th November, less than 48 hours after admission. *Stimulants*—wine 8 oz., whisky 4 oz., in all.

Case 35.—*Typhus with faint Eruption—Broncho-pneumonia—Recovery.*—Mill girl, aged 18. Admitted November 7 (7th day); dismissed November 30. In this case up to the 13th day there was nothing to distinguish it from an ordinary case of typhus, except the faintness of the rash; and the fever appeared to be declining, when chest symptoms set in, and two days afterwards there was dulness on percussion at left base, with coarse crepitant rāle, along with muco-purulent sputum, the fever at the same time distinctly increasing, with a very marked flush on the left cheek. On the administration of 1-8th gr. tartar-emetic every two hours, these unfavourable symptoms disappeared, and in three days the pulse had come down to 80, with decided convalescence. *No stimulants.*

Case 36.—*Typhus with Eruption—Protracted Crisis—Erysipelas of Face—Recovery.*—Mill girl, aged 19. Admitted November 7 (7th day); dismissed December 24. In this case there was some vomiting between the 9th and the 11th day, for which an emetic was given with relief. On the 15th day of the fever, however, the pulse was 142, and on the 17th day 152, the typhoid exhaustion being very considerable, and the rash very deep in colour, the urine also being passed in bed. A blister was applied to the head at this time, and 4 oz. of wine given daily. On the 18th day pulse 128, and on the 19th 118. The patient very deaf, but the delirium disappearing. Two days afterwards

the pulse showed a disposition to rise again, and on the 25th day of the disease erysipelas began on the left cheek, and suppuration took place from left ear, the erysipelas afterwards extending all over the face and scalp. The pulse was at this time 140, but the tongue quite clean and moist. On the 27th day the erysipelas, though still extending, was accompanied by a pulse of 136, and by improvement of the general symptoms. On the 35th day the erysipelas disappeared, and from this day convalescence made progress. *Stimulants*—100 oz. wine, in daily quantities of 4 oz., from 17th day of fever.

NOTE.—In this case, as in some former ones, a renewed rise of the pulse after the crisis had been declared, indicated a local complication. Dr. Murchison observes of erysipelas in typhus fever, that "as a rule it is not observed until the end of the second or third week, and in many cases it does not appear till convalescence. It may be attended by delirium, coma, and other head symptoms, and always adds greatly to the severity of the case." In this instance, a most dangerous attack of fever preceded the erysipelas, arriving at the acmé about the 17th day, when the pulse-rate was 152, the rash being at the same time very deep-coloured and ecchymosed, and typhoid exhaustion well marked. Although the pulse had never subsided to nearly the natural standard, a crisis had been distinctly pronounced, *i. e.*, the tongue had cleaned, the rash had faded, and the patient was quite evidently convalescent for several days before the erysipelatous attack commenced. Nor was the convalescence, though retarded, nearly so much interfered with by the erysipelas as might have been expected; for even at the height of the secondary fever the tongue remained clean and moist, the patient being at the same time free from delirium. It is consistent with my observation that not only erysipelas, but the most inveterate and multiplied abscesses in all parts of the body, may take place in protracted cases of typhus after the crisis, and yet be followed by a perfectly good recovery.

CASE 37.—*Typhus with Eruption—Bronchitis—Death.*—Sewer, aged 20. Admitted November 8 (12th day). Had symptoms of pretty severe bronchitis on admission, and pulse was 124. From this period to the 18th day, on which the patient died, the bronchitis continued without abatement, and obviously interfered with the development of the crisis. On the 17th day there was considerable raving, and the oppression of the breathing increased. The treatment was by tartar emetic and the ordinary cough mixture, together with mustard poultices to the front of the chest, and turpentine stupes to the back. *Stimulants*—the patient had in all 16 oz. of wine.

CASE 38.—*Typhus with Eruption—Recovery.*—Mill girl, aged 16. Admitted November 8 (6th day); dismissed December 1. Pulse attained its maximum rate on the 11th day, on which also there was a slight attack of epistaxis, and from this period the crisis commenced. *No stimulants.*

CASE 39.—*Typhus with Eruption—Bronchitis—Recovery.*—Married, aged 43. Admitted November 10 (11th day); dismissed December 8. In this case, as in some of the former, the crisis was much delayed owing to bronchitis, which was present on admission. There was, however, an imperfect crisis

about the 14th day, on which the pulse attained its maximum, 132, remaining, however, up to the 22nd day above 100, and falling to 60 on the 24th day of the disease. *No stimulants.* Was treated chiefly by cough mixtures.

Case 40.—*Typhus with Eruption—Bronchitis—Recovery.*—Potter, aged 22. Admitted November 10 (6th day); dismissed December 8. In this case there was also bronchitis, which developed itself so as to cause some lividity about the 12th day of the fever, the pulse being then at 126, the tongue much furred, and the rash very deep in colour. 1-8th gr. doses of tartar-emetic were given along with wine, and with excellent effect, as the pulse next day began to fall, and the crisis was thereafter uninterrupted though slow. It was observed in this and one or two other cases that not only the crisis was delayed, as regards the symptoms, but the fading of the rash appeared to be postponed by the complication. In this instance, although there were indications of crisis about the 13th day, the rash was still visible on the 18th day of the fever, or even later. *Stimulants*—wine, 64 oz. in all.

Case 41.—*Typhus with Eruption—Recovery.*—Girl, aged 12. Admitted November 11 (7th day); dismissed December 3. Pulse reached its maximum rate (126) on 9th or 10th day, but took at least eight days to subside to the normal standard. The convalescence was, however, uninterrupted. *No stimulants.*

Case 42.—*Typhus with Eruption—Remarkably slow pulse during the fever—Recovery.*—Married, aged 27. Admitted November 11; dismissed December 8. Patient was admitted in a very typhoid and insensible state, with cold extremities. Pulse 64; soft and weak. She was immediately given 4 oz. of wine, and this was exchanged next day for 4 oz. of whisky; pulse being still 64, and typhus rash distinct. Within three days more patient was convalescent. I apprehend, therefore, that she had been admitted at a very late stage of the fever, and that the exhausted and typhoid condition was probably due to accident or exposure during removal from home. *Stimulants*—in all 38 oz. of wine, and 24 oz. of whisky.

Case 43.—*Typhus with Eruption—Bronchitis—Diarrhœa—Suppuration of Ears—Recovery.*—Mill girl, aged 19. Admitted November 12 (8th day); dismissed December 8. The pulse fluctuated a good deal between the 8th and the 14th days, on both of which days it was 130, being the maximum rate. It seems probable that there was a good deal of latent pulmonary affection during this time, as patient was very restless, and was much disturbed by cough after the crisis, which was also delayed by diarrhœa and suppuration of the ears. On the 21st day of the disease the pulse was still 100. *No stimulants*—the age of the patient being favourable and the symptoms not extreme.

Case 44.—*Typhus with Eruption—Recovery.*—Married, aged 30. Admitted November 13 (date of fever not ascertained); dismissed December 12. A normal case, complicated only by slight bronchitis. *No stimulants.*

Case 45.—*Typhus with Eruption—Recovery.*—Girl, aged 12. Admitted November 14; dismissed December 5. Pulse reached the maximum rate (136) on the 11th day, followed by the usual slow crisis. *No stimulants.*

Case 46.—*Typhus with Eruption—Recovery.*—Girl, aged 6. Admitted November 14; dismissed December 5. One of the cases above alluded to (see Case 33), in which the symptoms scarcely exceeded those of febricula. *No stimulants.*

Case 47.—*Typhus with Eruption.—Death.*—Married, aged 54. Admitted November 15 (10th day?). Typhoid symptoms strongly pronounced on admission. Pulse 134, feeble. On November 16 pulse 140, very feeble; skin cool; countenance pale. Great weakness.

Nov. 17.—Pulse 144; still feeble. Pupils small. Coma advancing, and surface cold, but neither delirium nor tremor. First sound of heart very feeble.

Nov. 18. Pulse cannot be counted from softness and feebleness. Slight muttering.

Nov. 19. Died, 5 a.m. *Stimulants*—36 oz. of wine, 2 oz. of whisky, in all.

Case 48.—*Typhus with Eruption—Diarrhœa—Recovery.*—Potter, aged 16. Admitted November 16; dismissed December 17. Pulse reached maximum rate (130) on 11th or 12th day, at which time the typhoid symptoms very intense, and the bowels were loose. From this period the pulse declined steadily till the 17th day, when it was 76, and the rash was fading. During the further convalescence the left ear suppurated. *Stimulants*—4 oz. of wine, given on the evening of the 13th day, but it was not continued.

Case 49.—*Typhus with Eruption—Recovery.*—Married, aged 30. Admitted November 16; dismissed December 3. A mild case. Pulse rate in hospital not above 84. The only serious symptom was sleeplessness, for which she had an opiate second night after admission. *No stimulants.*

Case 50.—*Typhus with Eruption—Recovery.*—Married, aged 33. Admitted November 17 (8th day); dismissed December 10. Pulse rose to maximum rate of 106 on 12th day. The case presented nothing remarkable. *Stimulants*—68 oz. of wine.

Note.—I scarcely know why the wine was given in this case, except that it is noted in the journal that the patient "complains of great weakness, and requests a little wine." The convalescence was at the time proceeding quite uninterruptedly, and the pulse was 88 on the 14th day. The quantity given corresponds with a daily allowance of 4 oz. up to the date of dismissal.

Case 51.—*Typhus with Eruption—Diarrhœa—Recovery.*—Warehouse girl, aged 17. Admitted November 17 (8th day); dismissed December 17. Patient had passed through small-pox a month before admission, and had the remains of a profuse eruption. Pulse reached maximum rate between 8th and 12th days, in which period it rose to 130, or perhaps more, being at one time very small and difficult to count. On account of the character of the pulse, patient had an allowance of wine throughout. Diarrhœa occurred about the 12th day, and lasted several days, during which, however, the pulse was slowly coming down. The case presented very formidable symptoms at the acmé; but, notwithstanding the diarrhœa, the convalescence was almost uninterrupted. *Stimulants*—56 oz. of wine in all.

Case 52.—*Typhus with Eruption—Death.*—Married, aged 60. Admitted November 22 (11th day). Typhoid exhaustion very deep. Pulse very small, and not to be counted at wrist. Extremities cold. This patient died within 48 hours, the typhoid condition not having been at all relieved. She was ordered whisky on admission, but was not able to swallow much. *Stimulants*—whisky, 8 oz. in all during less than 48 hours.

Case 53.—*Typhus with Eruption—Recovery.*—Girl, aged 14. Admitted November 23; dismissed December 12. Pulse reached maximum rate (138) from 8th to 10th day. Convalescence was rapid; the symptoms more of the character of febricula than typhus. *No stimulants.*

Case 54.—*Typhus with Eruption—Recovery.*—Factory girl, aged 14. Admitted November 24; dismissed December 17. An almost precisely similar case to the last. *No stimulants.*

Case 55.—*Typhus with Eruption—Death.*—Married, aged 58. Admitted November 27, in a very deep state of typhoid exhaustion, with faint rash, cold extremities, very small pulse numbering 120, and a dark blue discoloration of the tip of the nose, which was painful, and cold to the touch. There were also ecchymoses on the limbs, somewhat of the character of vibices; but from marks of injury on knees, it is possible that they were bruises. The feet were very cold throughout, and it was hardly possible to keep the patient in bed. She

could not speak, nor give any indication of the duration of her illness. This state lasted till death on December 2. *Stimulants*—During four days 24 oz. of whisky.

Case 56.—*Fever of uncertain type with Cough—Recovery.*—Married, aged 42. Admitted November 28; dismissed December 3. This patient came from an epidemic locality, but cannot be said to have had the symptoms of typhus, and she had no rash. Feverishness was a well-marked symptom, but she had no typhoid expression, and the intelligence was maintained throughout, the only complaints being of cough and general pains. *No stimulants.*

Case 57.—*Typhus—No Eruption—Recovery.*—Girl, aged 12. Admitted November 30; dismissed December 24. A mild case, but with all the general characters of typhus, except the eruption. Crisis from 11th to 14th day. *No stimulants.*

Case 58.—*Typhus with Eruption—Recovery.*—Married, aged 40. Admitted November 30 (date of fever not ascertained); dismissed December 17. The case, in all respects, a normal one. *No stimulants.*

Although the preceding cases illustrate a considerable variety of forms of febrile disease, and are in all respects a fair example of the epidemic with which we have had to do in Glasgow for more than two years past, I am very far from wishing to infer that any conclusions drawn from them will be applicable, without qualification, to other epidemics, or to the same epidemic in other places. And further, although the number of cases here recorded is not inconsiderable, it is obviously too small for general statistical induction; I shall therefore avoid, for the most part, any direct inferences of this kind from the present series, except in so far as the results may be found to harmonize with those of the more extended observations referred to in the *Lancet* for March 12, 1864, in a paper published by me on the use of alcoholic stimulants in typhus. The more legitimate use of the facts now before the reader appears to be the investigation of details as to the usual course, symptoms, and nosological characters of fever in the present epidemic, the extent of its variations, the relation of these to individual peculiarities, and the results of treatment. The leading object of these remarks will accordingly be to state such results as appear to be most important in the form of a concise summary, with references to the cases above recorded in abstract.

But as the prognosis and treatment of fever are notoriously ruled to a great degree by the age of the patient, it seems expedient as a preliminary to further inquiries, to present a synoptical view of the ages of all the cases in the preceding series, distinguishing typhus from the other febrile affections, and intimating the ages at which the deaths took place in each disease. This will enable any one who may be desirous of comparing these cases with others, to do so without loss of time.

Of the 68 male cases of febrile disease above recorded, there were :—

Aged 5—10 years, 2 cases, of which one was scarlet fever, and the other doubtful typhus or febricula.
" 10—15 " 13 " of which three were febricula or doubtful, the rest typhus.
" 15—20 " 15 " all typhus.
" 20—25 " 16 " of which three were enteric fever, and two pneumonia, the rest typhus. One death from typhus, one from enteric fever, and one from pneumonia.
" 25—30 " 7 " all typhus.
" 30—35 " 7 " all typhus.
" 35—40 " 6 " all typhus, of whom three died.
" 45—50 " 1 case of typhus.
" 55—60 " 1 " typhus.

Of the 58 female cases, there were:—

Aged 5—10 years, 4 cases, of which one was cancrum oris, the rest typhus.
" 10—15 " 9 " of which one was febricula or doubtful typhus, the rest typhus.
" 15—20 " 13 " of which one was febricula, one pneumonia, the rest typhus.
" 20—25 " 10 " of which one was pneumonia, one probably enteric fever, the rest typhus. One death from typhus, one from pneumonia.
" 25—30 " 3 " all typhus.
" 30—35 " 6 " of which one was febricula, the rest typhus.
" 35—40 " 2 " both typhus.
" 40—45 " 4 " one doubtful (perhaps febricula or influenza, though from an epidemic locality); the rest typhus.
" 45—50 " 3 " all typhus, one died.
" 50—55 " 1 case of typhus, fatal.
" 55—60 " 2 cases of typhus, both fatal.
" 60—65 " 1 case of typhus, fatal.

It would appear from these details that the proportion of cases of typhus among the young (*i.e.*, up to the age of fifteen years) was decidedly less than in the larger series analysed in the paper above referred to in the *Lancet;* the difference being, I believe, due to a cause presently to be mentioned, affecting the admissions during the period under review, and not in operation during the former period. The smaller proportion of the young has of course, *cæteris paribus*, a tendency to raise the mortality of the present, as compared with the former series; and in this connection it may also be mentioned that the much larger proportion of aged patients among the females here reported, than among the males, has an obvious relation to the greater mortality among the former (an exception to the usual rule in typhus).

The peculiarity above alluded to as affecting the admissions was the great pressure of epidemic fever during the period to which this paper refers, which obliged the managers of the Royal Infirmary to throw on the parochial boards, to a considerable extent, the duty of providing accommodation for pauper cases,

and to confine the admissions, during a portion of the period, exclusively to those bringing recommendations from subscribers. The cases now under review, therefore, must be considered to belong to a class at least one remove above the line of pauperism, although the majority were, as will be apparent from the occupations mentioned, members of the labouring or artisan classes. I am not aware what influence this fact, *per se*, might be expected to have on the mortality; but from the returns made by the parochial boards, it does not appear that typhus, as treated in their hospitals, has been at all more fatal, on the whole, than in the Royal Infirmary; indeed, I suspect that the reverse is the fact.

Having these circumstances in view, I shall now proceed to give a brief summary of the mortality. Among the 108 cases of typhus (including both males and females in this result) there were 10 deaths; 4 of these deaths were among the 58 male cases of typhus, and 6 among the 50 females. Among the 4 male deaths in typhus, one (Case 15) took place within four hours after admission, and two others (Cases 17 and 58) during the primary fever (one on the 11th the other on the 14th day); the remaining case (41) was fatal from phlegmasia dolens occurring after convalescence was far advanced, and accompanied by inflammation of the femoral and iliac vein. Among the 6 female deaths in typhus, 4 were from the primary fever, one of these, aged 60, being admitted moribund, and dying within forty-eight hours (Case 52); another, aged 58, was in a state of collapse on admission, with great coldness of the extremities, and incipient gangrene of the tip of the nose, from which state she never rallied; two others (Cases 30 and 47) died from pure typhus, one at the 14th and the other probably at the 15th day; and the two remaining deaths (Cases 34 and 37) were from typhus, complicated with severe bronchitis. Several other cases of typhus fever nearly perished from pulmonary complications, which were more than usually frequent and severe; and one of the other fatal cases (Case 56, Males) was typhoid pneumonia, which, however, I did not regard as a case of typhus. Another case of pneumonia, complicated with delirium tremens (Case 24, Females), was fatal within a few hours after admission. Besides these, there was one death among the males from enteric fever, followed by pneumothorax and inflammation of the pleura, apparently from the bursting of a small pulmonary abscess, after convalescence. The total number of deaths from all causes, among 126 cases of miscellaneous febrile disease, is thus made up to 13, of which a brief summary has been given above.

It is to be observed that the remarkable immunity of the young from the more dangerous and fatal results of typhus (as formerly noticed in the paper in the *Lancet*) is in these more

recent cases completely maintained; there was not one death among the 21 cases admitted below 15 years of age. The middle period of life is also remarkably free from fatal results in the cases now under consideration. Up to the 35th year, among the males, there is only one death among 50 cases of typhus; and up to the 45th year, among the females, only one death among 43 cases of the same disease. Beyond these ages the mortality is heavy in both sexes, amounting to 8 out of 15 cases, males and females being taken together. Or, if we take the 45th year in both sexes as the limit between maturity and age, we find precisely 99 cases within that age, as against 9 cases beyond it, and the deaths, 10 in number in the two sexes, are exactly equally divided between the 99 younger and the 9 older persons, giving a rate of mortality exactly eleven times as great in the latter as in the former. Thus, including children and adults together up to the 45th year of life, and including in the mortality one case fatal within four hours after admission, one death from inflammation of the femoral vein, and one from severe bronchitis, we find that the deaths among the cases under 45 years of age were not more than five per cent., while beyond that age the mortality was at the rate of more than fifty per cent.*

I think it may fairly be inferred from these facts that while, during the past two months, typhus fever has abated none of its well-known severity as regards the aged, or perhaps has been even more than usually unsparing among persons beyond the 30th or 35th year, it has been an exceedingly manageable disease in persons below that age, and has (so far as the present series of cases denotes its epidemic character) been quite devoid of danger up to the 15th, or even nearly to the 20th year of life. And, so far as the earlier age is concerned, a very strong corroboration of these inferences is derived from the conjoined result of the cases now recorded, with those analysed in the *Lancet*, giving a total of 210 cases under 15 years of age, treated at different periods from November, 1862, to December, 1864, during a more than usually protracted epidemic of maculated typhus, with only one death, a child of 6 years old, admitted into hospital moribund,

* The deaths among the aged, in Dr. Murchison's great aggregate of 3506 cases in the London Fever Hospital, are in a somewhat smaller proportion than that above given, being a little more than 48 per cent. But on the other hand, the cases here recorded have an immense advantage over the London cases as regards the ages below 45; for the returns of the London Fever Hospital give 391 deaths among 2833 cases, or about 13·8 per cent., as against 5 per cent. in the present series. The proportion of cases below the age of 15 in the London returns is rather less than one-sixth of the whole, while in the present series it is a little less than one-fifth. Deducting these, the mortality for the middle period of life (15 to 45) is in the London returns 15·7 per cent.; in the presend cases, it amounts to a rate of between 6 and 7 per cent., or 5 deaths in 79 cases.

and not even placed under treatment. To make the facts more complete, as regards my own personal experience, I must add, even at the risk of some inaccuracy from the cases not having been tabulated, that I believe I have treated, in all, nearly 250 cases under 15 years of age since coming to Glasgow two years ago; and adding to this Glasgow experience the whole of the cases of typhus fever witnessed in Edinburgh since 1855, I am nearly certain there have not been more than two or three, certainly not more than four, deaths from typhus, among persons not of adult age (*i. e.* 14 or 15 as a limit) during the whole of that period.*

The *course* and *symptoms* of the fever which has formed the great mass of the epidemic, have, on the whole, been easily identified with those of typhus, as described by the best authorities of modern times. Yet there are not wanting differences of detail, as compared with the ordinary accounts of typhus, which, whether indicating peculiarities of the present epidemic, or differences of treatment, or both, deserve the attention of practitioners. Some years ago (see "Clinical Medicine," p. 164), I remarked upon a change which I had myself observed in the *course* of typhus fever, and especially in the phenomena of the crisis, as compared with my own earlier recollections, and with those of my friends who were engaged in the great epidemic of 1847–48. Writing in 1859, I used these words:—"I have again and again seen, of late, the pulse coming down several beats, the eruption fading, and the tongue cleaning progressively, at every period between the tenth and the fourteenth day; and in the case of children and young persons at least, I am certain that the change has begun quite as often before the twelfth day as after it. I have even observed the favourable change as early as the very beginning of the second week, and had at one time learned to look upon the eleventh day as, on the whole, the one most frequently critical." (P. 165.) Again, in regard to the character of this habitually early crisis, I remark a little further on, "It (the crisis) is rarely quite rapid or sudden, usually extending over two or three days, and

* The totals for all ages treated by me at different periods of the epidemic and analysed in the *Lancet* and in the present paper, with the deaths and proportionate mortality, will now stand as follows; and it is satisfactory to observe that the last series, as now added, gives the lowest mortality of the four, notwithstanding the smaller proportion of the cases under fifteen years to the whole number:—

	Cases.		Deaths.		Mortality per cent.
1st series,	225	...	25	..	11·1
2nd do.	101	...	19	...	19·0
3rd do.	269	...	27	...	10·0
4th do.	108	...	10	...	9·3
	703	...	81	...	11·5

often barely appreciable till it has been forty-eight hours or more in progress." (P. 167.) These observations, which many of my friends, both in Edinburgh and London, received with evident doubt and hesitation at the time, are fully borne out by the facts of the present epidemic, as here faithfully recorded. And I appeal with confidence to the observations of those who will follow out the variations of the disease, and especially of the pulse, with the necessary care and exactness, for corroborative proof of this early crisis.

But observe the conditions of the experiment. *The patient must be in a very well-ventilated ward, with abundance of milk and other light nourishment, frequently offered; and either with none, or with very small and carefully regulated quantities, of alcoholic stimulants.* I do not indeed venture to affirm, though I strongly suspect, that the opposite practice will lead directly to a delay of the crisis; but if any one shall fail, after due precautions, to observe the phenomena here alluded to in a large proportion of the cases of the present epidemic, I confess I should strongly recommend him to look to the wine and spirit roll, and see if the cause of the disturbance is not to be found there.

I will add to this one further remark, which is to be regarded as the corollary of the other, and of great importance whether as regards prognosis or treatment, viz., *that in the event of a gradual fall in the rate of the pulse being observed, at any period from the eighth day of the fever onwards to the fourteenth, the delay, even for many days, of the other phenomena of the crisis is not,* per se, *dangerous, and the result may usually be awaited without any change of treatment.* If the practitioner can but get a firm faith in these principles, and if he will apply them so as to keep his practice in accordance with nature, and not to pervert the course of the disease at this critical period by injudicious interference, I fully believe he will have done his best to reduce the mortality to a minimum.

The proof of these remarks is to be found in the whole body of the cases recorded briefly above, and in the more detailed narratives of them in the hospital journals. More especially I would refer to the following cases, in all of which the maximum rate of the pulse was definitely ascertained to have been attained about, or before, the 12th day:—Males, Cases 1, 4, 6, 11, 13, 18, 19, 21, 24, 28, 30, 33, 34, 35, 36, 38, 40, 42, 43, 44, 46, 48, 49, 51, 53, 55, 57, 61, 62, 63, 64, 65, 67; Females, Cases 5, 6, 8, 11, 13, 17, 20, 22, 27, 33, 38, 41, 44, 45, 46, 48, 53, 54. In several of these cases the pulse-maximum was as early as the 8th, 9th, or 10th day, and in the most of them the crisis in other respects was hardly appreciable for several days after the fall of the pulse; in a few there was even protracted delirium, a very dry tongue, and

a persistent deep-coloured rash for many days after the favourable change in the rate of the pulse was observed; but in not one of all these instances was there any real cause for serious apprehension after the decisive phenomenon above referred to, and in very few, if any of them, am I disposed, on a retrospect of the whole, to think that stimulants or any other active remedy was required. In a few of the more protracted crises, on the other hand, as in Case 4 and perhaps Case 12 (Females), I was led to believe (but, it may be, wrongly) that stimulants administered early in the disease, and to an unnecessary, if not injurious amount, may have had something to do with the prolongation of the fever.

With a few words, necessarily brief, upon the subject of treatment, I must close this too lengthened paper. The first lesson that has to be learned in dealing with fever, is at the same time to many minds the most difficult—to let well alone. And those who naturally or by education incline to a more or less active routine practice, are not, I believe, likely to be convinced by statistics, or by any form of abstract reasoning, that such practice is either unnecessary or injurious in such a disease as typhus fever. The argument, to many an irresistible one, will always recur—What! are we to stand by and to do nothing at all, when the pulse is 120, the tongue dry, the brain oppressed and delirious? and it may even be admitted that the question is an extremely embarrassing one for all who are not prepared to answer it out of a matured and carefully studied experience. But in view of facts which have become clearer and clearer in proportion as our knowledge of typhus fever has been defined and rendered more exact, it has become a duty with teachers of medicine, not indeed to acquiesce in a blind expectancy, any more than in any other unreasoning routine, but to take a firm hold of principles based upon experience, and to place these in the light of such practical illustrations as their opportunities, derived from hospital practice, enable them to command.

I would therefore invite the attention of all physicians who admit any doubt as to the proper practice in typhus fever, and especially of all who have still to attain practical experience on a large scale, to the cases here recorded, with the view of showing:—

1. That at least two-thirds, more probably three-fourths, perhaps even a greater proportion, of the cases of typhus fever in the present epidemic, may be successfully treated without either medicine or stimulants; or, at least, with only such slight accidental doses of either as cannot be supposed to influence considerably the result of the fever, as such.

2. That in the cases of typhus fever recorded in this paper the treatment, whether by stimulants, or medicines, or both, has been

directed entirely to emergencies and casualties, and not to the subduing of the febrile excitement, or the restraining of the typhoid delirium, or the reduction of the frequency, or increasing the strength, of the pulse; on the principle that fever, with rapid weak pulse and a certain amount of typhoid delirium, are to be regarded as the normal facts of the disease, always observed within certain limits of time, and not to be avoided, or cut short, by any known specific treatment; from which it follows, that remedies, especially very active remedies, are to be reserved chiefly for manifest variations from this normal course; as when tartar emetic has been given, in small doses with wine, in numerous cases of bronchitic complication, or wine and whisky in obvious tendency to collapse; or to take a less extreme instance, a purgative in accidental constipation, an emetic in gastric irritability, lime-water in diarrhœa, or an opiate in case of protracted sleeplessness in the early stage.

3. That under a practice so regulated, the mortality of typhus fever has been not more than 9·3 per cent. in the cases here presented, which have been treated absolutely without selection, and without excluding a single fatal case on any ground whatever.

4. That in children and young persons, probably up to the age of 20, or at least 15, typhus fever, so treated, is a disease of hardly any danger.

5. That in all cases where a regular daily note of the pulse shows a gradual climax, ending in a maximum rate on the 8th, 9th, 10th, 11th, or 12th days, or even later, and afterwards a gradual decline in the rate, there is no occasion for alarm after the crisis of the pulse has been reached, even although delirium should go on, hardly abated, for several days; and that no sudden crisis is to be expected, or wished for, in such circumstances.

6. That nourishment, of the kinds indicated at the beginning of this paper, is to be carefully administered throughout the course of typhus fever. That free ventilation is also indispensable.

7. That good nursing, and constant watchfulness against casualties; especially watching of the chest, the evacuations, and the skin of the back, are the real "physic" needed by all fever patients; and more particularly by the old, the intemperate, and the subjects of chronic disease, in whom the danger is incomparably greater than in the young, healthy, and temperate.

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